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Annual Planning Information Report

Program year 1988

State of Michigan

ANNUAL PLANNING INFORMATION

PROGRAM YEAR 1988
(July 1988 through June 1989)

MICHIGAN

Prepared by

MICHIGAN EMPLOYMENT SECURITY COMMISSION
Bureau of Research and Statistics
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PREFACE

This Annual Planning Information Report, published by the Michigan Employment Security Commission, Bureau of Research and Statistics, is an attempt to fulfill many of the data needs required by local planners. This report contains standardized information which is comparable with that prepared for the other service delivery areas in Michigan. Data prepared by MESC is published along with information from other agencies in an attempt to provide area planners with an awareness of the broad range of information which is currently available for local planning purposes. The report's appendices contain specially prepared information tables intended to be used in conjunction with other data and narrative portions of this report.

This information was developed to meet the Michigan Department of Labor, Bureau of Employment and Economic Development's current planning guidelines and is the most comprehensive program year data currently available. The MESC Labor Market Analysis staff utilized various data resources to estimate or project area planning information. In order to facilitate the use of this package, sections on table descriptions and glossary of terms are included. Data limitations, interpretation, and application are discussed in the table description section. User questions and suggestions are welcome.

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HIGHLIGHTS

Population developments were adversely affected by the state's severe economic recession between 1980 and 1982. Although the state's population has been increasing since 1984, the 1986 level is significantly lower than the 1980 level.

The state's labor force continues a slowdown in growth that began in the early 1980's.

The state's labor market conditions began to improve after 1982, and by 1986 employment increased by 391,000. Strong employment growth resulted in a significant unemployment rate decline from a high of 15.5 percent in 1982 to 8.8 percent in 1986.

The state jobless rate is expected to bottom out at 8.3 percent in PY 1986, but cutbacks in manufacturing employment and continued labor force gains should result in an unemployment rate rise to 9.2 percent in PY 1988.

Private wage and salary employment in the state increased by approximately 285,300 jobs or 10.3 percent over the 1980-86 period.

Those industries which are currently the best targets for employment and training are services (business, other professional and personal), other retail trade (eating and drinking places), plastic products, department stores and finance, real estate and insurance.

Wage and salary employment between PY 1986 and PY 1988 is expected to increase by nearly 1.4 percent or 53,000 jobs.

Occupational groups expected to have above average employment growth between 1985-95 include executive, administrative and managerial workers; professional workers; technicians and related workers; and sales and service workers.

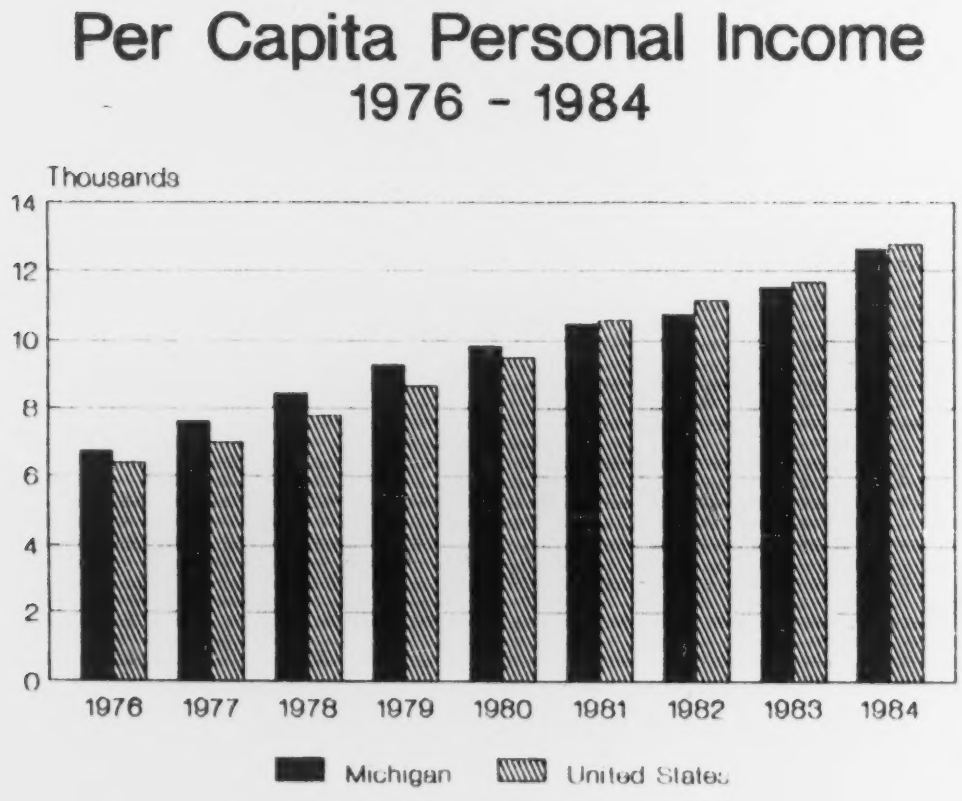
Approximately 60 percent of the top 20 occupations expected to experience the most employment decline are industrial, blue collar jobs.

I. AREA PROFILE

Michigan is divided into two peninsulas by the Straits of Mackinac and is bordered by four of the Great Lakes, the states of Indiana, Ohio and Wisconsin and the Canadian Province of Ontario. In terms of land area, Michigan is the 23rd largest state but its coastline is second only to Alaska. Michigan's aquatic scenery consists of a 3,000 mile shoreline that extends along the Great Lakes, and inland lakes that exceed 11,000 in number. In addition to 6.4 million acres of public forests, the state's 14,000 campsites and 83 parks and recreational areas have made Michigan a popular vacation-land in which billions of tourist dollars are spent annually.

The two peninsulas of Michigan are connected by the five mile long Mackinac Bridge, the third longest suspension span in the United States. The Upper Peninsula is rich in iron ore, copper and other minerals. The Lower Peninsula also has vast natural resources (oil, natural gas and salt), however, primary economic activity is centered around automobile manufacturing. Although efforts have been made towards industrial diversification, the transportation equipment industry and its vast network of supplier plants continue to form the mainstay of the state's economy.

FIGURE 1



In terms of income and earnings, the per capita personal income of Michigan residents rank in the top half of the nation. In 1984, state residents had a per capita personal income of $12,621. This was the 21st highest level recorded in the nation and an increase of 29 percent from 1980. The national average for 1984 reached $12,772, an increase of 35 percent over the same time period. Persons employed in Michigan primarily earned their income in three major industry sectors. The largest industries in 1984 were durable goods manufacturing, which accounted for 33.2 percent of earnings; services, 17.5 percent; and state and local government, 11.5 percent.

Michigan consists of 83 counties, which are grouped into 68 labor market areas (LMA's), of which 11 are defined as Metropolitan Statistical Areas (MSA's). Lansing, the state's legislative capital and fifth largest city, is centrally located in the southern portion of the Lower Peninsula. Detroit, the state's commercial capital and largest city with a 1984 population of approximately 1.1 million, is situated in the southeastern corner of the Lower Peninsula. With the central administrative offices of the three largest automakers and numerous factories and auto-related facilities, the Detroit metropolitan area is the focal point of manufacturing and trade activity in the state.

POPULATION

Population developments in a local area have important implications for current and future employment and training policy. The size and age distribution of an area's population is a major influence on its labor supply. Michigan's recent population developments point to a possible slowdown in its future labor supply. Michigan's population in 1980 totaled 9,262,078. Although this represented a 4.3 percent increase from the 1970 level, recent population estimates show a significant slowing in the state's growth. In 1986, the state's population was 9,145,000, which represents a 1.3 percent decline from the 1980 level.

Population developments were adversely affected by the state's severe economic recession between 1980 and 1982. Although the state's population has been increasing since 1984, the 1986 level is significantly lower than the 1980 level.

TABLE I.A

TOTAL POPULATION

MICHIGAN - UNITED STATES

YEAR	POPULATION		PERCENT CHANGE	
	MICHIGAN	UNITED STATES	MICHIGAN	UNITED STATES
1940	5,256,106	132,164,569	-	-
1950	6,371,766	151,325,798	21.2	14.5
1960	7,823,194	179,323,175	22.8	18.5
1970	8,881,826	203,211,926	13.5	13.3
1980	9,262,078	226,545,805	4.3	11.5
1986	9,145,000	241,077,000	-1.3	6.4

Source: U. S. Bureau of the Census and Michigan Department of Management and Budget

DEMOGRAPHICS

Information on the racial and ethnic composition of an area's population and family structure is important to understanding racial and ethnic differences in median family income, poverty and eligibility for income-conditioned programs such as JTPA Title II. Data for 1980 on the racial and ethnic characteristics of the population and of households are presented in the following tables. No comparisons are made between the 1970 and 1980 Census detail for racial categories due to differences in Census enumeration procedures.

TABLE I.B

DEMOGRAPHIC POPULATION CHARACTERISTICS

MICHIGAN

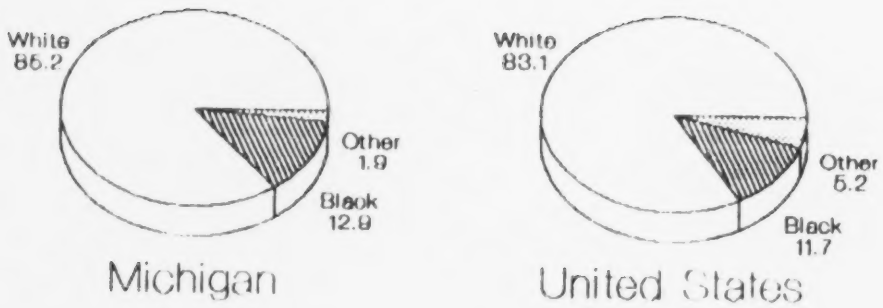
1980

	1980	PERCENT OF TOTAL POPULATION
TOTAL POPULATION	9,262,078	100.0
SEX		
Male	4,514,957	48.7
Female	4,747,121	51.3
RACE/ETHNIC (1)		
White	7,893,278	85.2
Black	1,197,177	12.9
Native American	44,919	0.5
Asian/Pacific Islander	62,641	0.7
Other	64,063	0.7
Hispanic	157,626	1.7

Source: 1980 Census

FIGURE 2

Population
1980



Michigan's racial makeup includes a higher proportion of whites and blacks than nationwide while other minority races are less represented. Michigan's 1980 racial distribution was 85.2 percent white, 12.9 percent black and 1.9 percent other races, compared to the national distribution of 83 percent white, 12 percent black and 5 percent other races. The state's hispanic population, at almost 2 percent of total, is significantly less well represented than it is nationally, at 6.4 percent.

The changing age structure of the state's population is another demographic development with important implications for future labor force trends and replacement demands for workers.

Between 1970 and 1980, the state's overall population on average grew older. During this period, as the birth rate declined, the 1940-50 "baby boom" population reached prime working age. The 22-54 age group's proportion increased from 39 to 43 percent of total population, the 55+ age group increased from 17 to 19 percent and the 16-21 age group increased from approximately 11 to 12 percent. These developments indicate the state is likely to experience a relatively greater amount of job replacement demand due to retirements during the 1980's than any time in the recent past. In addition, relatively greater labor force growth should occur in the 22-54 age group.

TABLE I.C

POPULATION AGE STRUCTURE

MICHIGAN

1970 - 1980

AGE GROUP	1970 PERCENT	1980 PERCENT
Under 10	19.5	15.2
10-13	8.8	6.9
14-15	4.4	3.7
16-17	4.1	3.9
18-19	3.7	3.9
20-21	3.2	3.9
16-21	10.9	11.7
22-24	4.6	5.7
25-34	12.1	16.4
35-44	11.3	11.1
45-54	11.3	10.1
55-64	8.5	9.3
65+	8.5	9.8

Source: 1980 Census

If labor force participation rates remain unchanged, then a declining population in the under 17 age group will mean that relatively fewer labor force entrants will need to be absorbed by the Michigan job market in the late 1980's.

During March 1980, there were 2,404,910 Michigan households. Of this total 410,746 households, or 17.1 percent, were headed by females. The share of Michigan households headed by women varies sharply by racial and ethnic group. Of all white, non-hispanic households in this state, only 13.3 percent are headed by women. Among black, native american and hispanic households, the ratio rises to 44.4 percent, 27.3 percent and 22.3 percent, respectively.

Other data detailing family poverty by race and ethnic characteristics indicate a relatively greater incidence of poverty among black, native american and hispanic families. In addition, more than half of the families with income below the poverty level are headed by females.

TABLE I.D

MICHIGAN HOUSEHOLDS

1980

	TOTAL HOUSEHOLDS	FEMALE HOUSEHOLDS	PERCENT FEMALE
Total	2,404,910	410,746	17.1
White (Non-Hispanic)	2,069,993	275,766	13.3
Black (Non-Hispanic)	277,809	123,297	44.4
Native American (Non-Hispanic)	9,912	2,710	27.3
Asian and Pacific Islander (Non-Hispanic)	12,559	1,368	10.9
Other (Non-Hispanic)	927	96	10.4
Hispanic	33,710	7,509	22.3

Source: 1980 Census

TABLE I.E

MICHIGAN FAMILIES

BELOW POVERTY

1980

	TOTAL FAMILIES BELOW POVERTY	PERCENT OF ALL FAMILIES	PERCENT FEMALE WITH NO HUSBAND PRESENT
Total	198,391	8.2	54.5
White (Non-Hispanic)	124,306	6.0	43.5
Black (Non-Hispanic)	65,015	23.4	76.2
Native American (Non-Hispanic)	1,927	19.4	56.7
Asian and Pacific Islander (Non-Hispanic)	1,313	10.5	21.9
Other (Non-Hispanic)	116	12.5	29.3
Hispanic	5,714	17.0	54.0

Source: 1980 Census

II. LABOR MARKET DEVELOPMENTS

LABOR FORCE TRENDS

The state's labor force continues a slowdown in growth that began in the early 1980's. The largest labor force growth, 10.3 percent, occurred over the 1975-80 period. During the 1980-86 period the labor force grew by only 2.2 percent. This reduced growth can be attributed to the 1980-82 recession which severely affected labor market conditions in Michigan. The state's labor market conditions began to improve after 1982 and by 1986 employment had increased by 391,000. Strong employment growth resulted in a significant unemployment rate decline from a high of 15.5 percent in 1982 to 8.8 percent in 1986.

The change in labor force growth reflects lower population and participation growth rates for some groups. For example, of the six major groups reflected in the following table, four experienced lower labor force participation rates. Labor force trends in the 1970's and currently are dominated by the movement of the baby-boom generation from the ages of labor force entry into the prime working ages. The participation trends are affected by the aging of the baby-boom generation and by an ever increasing propensity of older workers to retire early. The following brief discussion of major groups reflect the variance of labor force trends by age, sex and race.

Women

The prime age female labor force has consistently been the fastest growing group. In Michigan, over the 1980-86 period, the adult female labor force participation rate increased by 3.2 points, as their labor force ranks swelled by approximately 11,000. By 1986, nearly 53 percent of the adult female population participated in the labor force. During the latter part of the 1980-86 period, labor market conditions for women improved as employment increased by 192,000, causing the unemployment rate to fall by 2.4 points to 8.0 percent in 1986.

Youth

In Michigan the teenage labor force began to decline in 1980. During the 1980-86 period the state's teenage labor force dropped by nearly 16 percent, the largest decline of any labor force group. Historically, teenagers have faced considerable competition for jobs, however with their numbers falling, there should be relatively less competition. Another effect of a smaller teenage labor force is possible labor shortage for some employers of younger workers. However, some employers are responding to this shortage by hiring a different age mix of employees or by offering higher wages to continue attracting teenage employees. Labor market conditions overall have not improved for teenage workers. During the 1980-86 period, employment declined by 54,000 as double-digit unemployment rates continued. In 1986, youth unemployment averaged 21.1 percent.

Seniors 55+

The older labor force (55 years and over) began to contract in the 1980's and is expected to continue declining. During the 1980-86 period, the senior labor force declined by nearly eight percent. As more people are covered by pension plans, labor force participation of older workers can be expected to drop. The seniors were one of two labor force groups (the other was teenagers) experiencing declines over the 1980-86 period. Labor market conditions for the senior labor force have remained fairly stable. This group generally experiences one of the lowest unemployment rates of any labor force group. During 1986 the senior labor force unemployment rate averaged 4.4 percent.

Nonwhite

The nonwhite labor force continued to grow faster than the white labor force over the 1980-86 period. The nonwhite labor force expanded by nine percent compared to 3.5 percent for white. In 1986, the nonwhite labor force comprised 11.6 percent of the state's total labor force. During the 1980-86 period, labor market conditions for the nonwhite group were somewhat improved as their unemployment rate declined nearly four points to 17.9 percent in 1986. However, this group continues to experience sharply higher relative rates of unemployment. Estimated nonwhite unemployment rates ranged from two to three times those for whites during the 1980-86 period.

TABLE II.A

LABOR FORCE STATUS
1980 AND 1986
MICHIGAN

(Data in Thousands)

	1980	1986	NUMBER CHANGE	PERCENT CHANGE
Total 16+				
Population	6799	6860	+61	+0.9
Labor Force	4298	4393	+95	+2.2
LF Participation Rate	63.2	64.0	+0.8	XXX
Employment	3757	4007	+250	+6.7
Unemployment	541	385	-156	-28.8
Rate (percent)	12.6	8.8	-3.8	XXX
Men 20+				
Population	2917	2963	+46	+1.6
Labor Force	2291	2287	-4	-0.2
LF Participation Rate	78.6	77.2	-1.4	XXX
Employment	2005	2118	+11.3	+5.6
Unemployment	286	170	-116	-40.6
Rate (percent)	12.5	7.4	-5.1	XXX
Women 20+				
Population	3163	3285	+122	+3.9
Labor Force	1572	1739	+167	+10.6
LF Participation Rate	49.7	52.9	+3.2	XXX
Employment	1408	1600	+192	+13.6
Unemployment	164	138	-26	-15.9
Rate (percent)	10.4	8.0	-2.4	XXX
Youth 16-19				
Population	720	612	-108	-15.0
Labor Force	435	367	-68	-15.6
LF Participation Rate	60.4	60.0	-0.4	XXX
Employment	344	290	-54	-15.7
Unemployment	91	77	-14	-15.4
Rate (percent)	20.9	21.1	+0.2	XXX

TABLE II.A, (Continued)

LABOR FORCE STATUS
1980 AND 1986
MICHIGAN

(Data in Thousands)

	1980	1986	NUMBER CHANGE	PERCENT CHANGE
Seniors 55+				
Population	1772	1807	+35	+2.0
Labor Force	537	496	-41	-7.6
LF Participation Rate	30.3	27.4	-2.9	XXX
Employment	514	474	-40	-7.8
Unemployment	23	22	-1	-4.3
Rate (percent)	4.3	4.4	+0.1	XXX
White 20+				
Population	5304	5394	+90	+1.7
Labor Force	3397	3517	+120	+3.5
LF Participation Rate	64.0	65.2	+1.2	XXX
Employment	3048	3300	+252	+8.3
Unemployment	349	217	-132	-37.8
Rate (percent)	10.3	6.2	-4.1	XXX
Nonwhite 20+				
Population	776	854	+78	+10.1
Labor Force	467	509	+42	+9.0
LF Participation Rate	60.4	59.6	-0.5	XXX
Employment	365	418	+53	+14.5
Unemployment	102	91	-11	-10.8
Rate (percent)	21.8	17.9	-3.9	XXX

Source: Current Population Survey - Michigan
Bureau of Labor Statistics

LABOR MARKET PROJECTIONS

Additional labor force and employment growth is expected in Michigan over the next two years. However, the steady statewide reductions since 1982 in the levels and rates of unemployment are not projected to continue through PY 1988. The state jobless rate is expected to bottom out at 8.3 percent in PY 1986, but cutbacks in manufacturing employment and continued labor force gains should result in an unemployment rate rise to 9.2 percent in PY 1988. Over the two year period, statewide employment is projected to increase by 2.6 percent to 4,128,000 (see Table II.B), and the state labor force will grow by 90,000 or 2.0 percent.

TABLE II.B

LABOR FORCE PROJECTIONS

MICHIGAN

	PY 1986 7/86-6/87	PY 1987 7/87-6/88	PY 1988 7/88-6/89
Labor Force	4456	4499	4546
Employment	4085	4101	4128
Unemployment	372	398	418
Rate (percent)	8.3	8.9	9.2

Source: Michigan Employment Security Commission

Note: Data in Thousands

TABLE II.C

CIVILIAN LABOR FORCE BY AGE, SEX AND RACE
PROGRAM YEAR 1988

MICHIGAN

	Civilian Labor Force	Total Employment	Unemployment	
			Number	Rate
Area Total	4,546,000	4,128,000	418,000	9.2
16-19	367,552	297,143	70,409	19.2
20-21	267,023	229,097	37,926	14.2
22-54	3,399,887	3,115,520	284,367	8.4
55-64	425,756	404,905	20,851	4.9
65+	85,783	81,104	4,679	5.5
Male	2,520,496	2,279,657	240,839	9.6
Female	2,025,503	1,848,112	177,393	8.8
White	3,960,977	3,670,735	290,242	7.3
Nonwhite	585,024	457,034	127,990	21.9

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

Note: Detail may not sum to area total due to rounding.

III. INDUSTRY EMPLOYMENT

INDUSTRY STRUCTURE

Identification of current area employment structure and trends over time is an important task of local human resource planners in the development of effective employment and training programs. The following analysis is designed to provide insight into the current level and industrial composition of employment and to identify the dominant sources of employment growth over time at the state level.

For a general overview of industry employment composition, Figure 4 compares the statewide structure to that of the nation. The most significant difference between industry employment in Michigan and the U.S. is the larger proportion of jobs supplied by the state's manufacturing sector. During PY 1986, manufacturing jobs accounted for 27 percent of total industry employment statewide, well in excess of the national percentage of 19 percent. Employment is relatively greater nationally in construction, transportation, communications and utilities, wholesale trade, finance, insurance, real estate and services. A further distinction between national and statewide employment is that nationally the service industry has surpassed manufacturing as the major sector industry employer, while statewide, manufacturing sector employment remains well above the level supplied by the service industry.

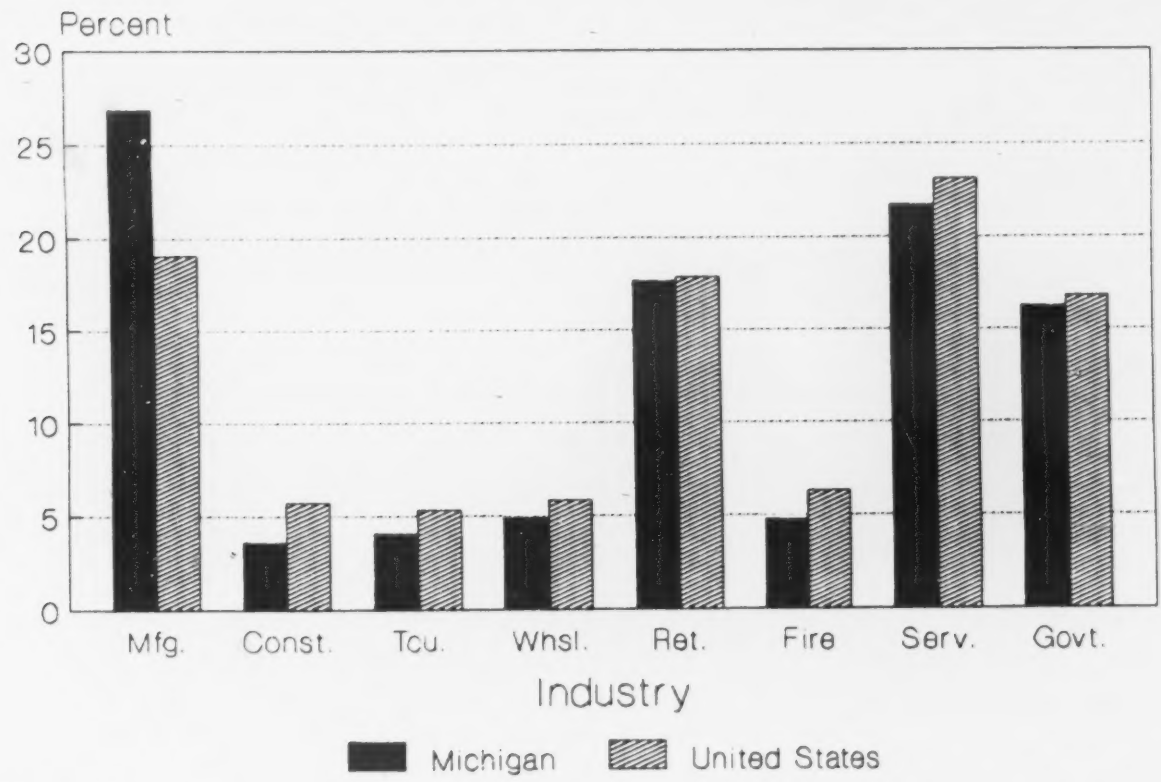
More detailed analysis of industry employment structure can be made using data from the MESC ES-202 system. This data is very comprehensive since it is based on employment information collected on over 90 percent of Michigan firms. The data is useful in facilitating the identification of specific industry sources of concentrated employment necessary for OJT marketing, job placement and job development activities. Table III.A presents private industry employment data from the 4th quarter 1986 ES-202 system at the two-digit Standard Industrial Classification (SIC) level. An examination of the data shows that nearly one-third of the state's private industry employment is concentrated in four industries. These industries are transportation equipment, 11.6 percent; medical and other health, 8.6 percent; eating and drinking places, 7.3 percent; and business services, 5.7 percent. Table III.B lists the state's top ten industries, which represent 54.1 percent of private wage and salary employment.

INDUSTRY EMPLOYMENT TRENDS

Once area industry structure is analyzed and prominent employment sectors identified, an important second step in determining employment opportunities is the assessment of recent trends in industry employment. Table III.C reflects Current Employment Statistics (CES) survey data for PY 1980-1986. Current Employment Statistics data is based on the monthly BLS-790 survey which collects employment and payroll data on area firms. Absolute and relative job generating performance can be identified by comparing industry employment levels over time.

FIGURE 3

MICHIGAN & UNITED STATES
EMPLOYMENT PERCENT BY INDUSTRY PY 1986



Source: MESC

TABLE III.A

PRIVATE INDUSTRY EMPLOYMENT ANALYSIS
1986

STATE OF MICHIGAN

SIC	INDUSTRY TITLE	4TH QUARTER EMPLOYMENT NUMBER	PERCENT OF TOTAL
	TOTAL	3,001,311	100.0
01	AGRICULTURE-CROPS	8,935	0.3
02	AGRICULTURE-LIVESTOCK	1,278	0.0
07	AGRICULTURE SERVICES	12,426	0.4
08	FORESTRY	701	0.0
09	FISHERIES	106	0.0
10	METAL MINING	2,664	0.1
13	CRUDE PETROLEUM AND NAT GAS	3,726	0.1
14	NONMETALLIC MINING, QUARRYING	2,892	0.1
15	GENERAL BUILDING CONTRACTORS	30,677	1.0
16	GENERAL CONTRACTORS, EXC BLDG	14,787	0.5
17	SPECIAL TRADE CONTRACTORS	80,001	2.7
20	FOOD AND KINDRED PRODUCTS	44,817	1.5
22	TEXTILE MILL PRODUCTS	1,390	0.0
23	APPAREL, TEXTILE PRODUCTS	21,756	0.7
24	LUMBER AND WOOD PROD	13,892	0.5
25	FURNITURE AND FIXTURES	28,194	0.9
26	PAPER AND ALLIED PRODUCTS	21,405	0.7
27	PRINTING AND PUBLISHING	39,472	1.3
28	CHEMICAL AND ALLIED PRODUCTS	40,037	1.3
29	PETROLEUM AND COAL PRODUCTS	3,241	0.1
30	RUBBER, MISC PLASTIC PRODUCTS	43,522	1.5
31	LEATHER PRODUCTS	2,137	0.1
32	STONE, CLAY, GLASS PROD	17,372	0.6
33	PRIMARY METAL PROD	48,208	1.6
34	FABRICATED METAL PROD	122,209	4.1
35	MACHINERY, NONELECTRICAL	127,454	4.2
36	ELECTRICAL MACHINERY	37,405	1.2
37	TRANSPORTATION EQUIP	354,211	11.8
38	MEASURING AND CONTROLLING INSTR	14,413	0.5
39	MISC MANUFACTURING	7,502	0.2
40	RAILROADS, RAILWAY EXPRESS	194	0.0
41	LOCAL INTERURBAN TRANSIT	4,363	0.1
42	TRUCKING AND WAREHOUSING	45,213	1.5
44	WATER TRANSPORTATION	1,551	0.1
45	AIR TRANSPORTATION	12,535	0.4
46	PIPELINES	263	0.0

TABLE III.A, (Continued)

PRIVATE INDUSTRY EMPLOYMENT ANALYSIS

SIC	INDUSTRY TITLE	4TH QUARTER EMPLOYMENT NUMBER	4TH QUARTER EMPLOYMENT PERCENT OF TOTAL
47	TRANSPORTATION SERVICES	7,878	0.3
48	COMMUNICATIONS	34,849	1.2
49	UTILITIES, SANITARY SERVICES	35,146	1.2
50	WHOLESALE TRADE-DURABLES	114,507	3.8
51	WHOLESALE TRADE-NONDURABLES	67,286	2.2
52	BUILDING MATERIALS	26,044	0.9
53	GENERAL MERCHANDISE, TOTAL	100,935	3.4
54	FOOD AND DAIRY STORES	93,426	3.1
55	AUTO DEALERS, GAS STATIONS	74,206	2.5
56	APPAREL AND ACCESSORIES	40,813	1.4
57	FURNITURE	26,610	0.9
58	EATING AND DRINKING PLACES	221,700	7.4
59	MISC RETAIL TRADE STORES	79,538	2.7
60	BANKING	54,328	1.8
61	CREDIT AGENCIES	25,965	0.9
62	SECURITY AND COMMODITY BROKERS	6,477	0.2
63	INSURANCE	38,594	1.3
64	INSURANCE AGENTS AND BROKERS	16,937	0.6
65	REAL ESTATE	26,341	0.9
66	REAL ESTATE INSURANCE AND LOAN OFF	243	0.0
67	HOLDING AND OTHER INVESTMENT OFF	2,512	0.1
70	HOTELS AND LODGING PLACES	28,073	0.9
72	OTHER PERSONAL SERVICES, TOTAL	36,359	1.2
73	BUSINESS SERVICES	172,772	5.8
75	AUTOMOBILE REPAIR SERVICES	28,510	0.9
76	OTHER REPAIR SERVICES	12,857	0.4
78	MOTION PICTURES, THEATERS	5,005	0.2
79	MISC ENTERTAINMENT	26,520	0.9
80	MEDICAL, OTHER HEALTH	263,768	8.8
81	LEGAL SERVICES	22,268	0.7
82	EDUCATION SERVICES	18,274	0.6
83	SOCIAL SERVICES	44,470	1.5
84	MUSEUMS, ART GALLERIES, ZOOS	1,538	0.1
86	NONPROFIT ORGANIZATIONS	25,429	0.8
88	PRIVATE HOUSEHOLDS	3,322	0.1
89	OTHER PROF, RELATED SERVICES	6,859	0.2

P - Protected Information

Source: Michigan Employment Security Commission
Bureau of Research and Statistics - ES202

TABLE III.B

TOP TEN
PRIVATE INDUSTRIES IN EMPLOYMENT
1986

MICHIGAN

SIC	INDUSTRY TITLE	4TH QUARTER EMPLOYMENT	
		NUMBER	PERCENT OF TOTAL
	STATEWIDE TOTAL	3,052,015	100.0
37	TRANSPORTATION EQUIP.	354,211	11.6
80	MEDICAL OTHER HEALTH	263,768	8.6
58	EATING AND DRINKING PLACES	221,700	7.3
73	BUSINESS SERVICES	172,772	5.7
35	NONELECTRICAL MACHINERY	127,454	4.2
34	FABRICATED METAL PRODUCTS	122,209	4.0
50	WHOLESALE TRADE-DURABLES	114,507	3.8
53	GENERAL MERCHANDISE STORES	100,935	3.3
54	FOOD AND DAIRY STORES	93,426	3.1
17	SPECIAL TRADE CONSTRUCTION	80,001	2.6

Source: Michigan Employment Security Commission
Bureau of Research and Statistics - ES202

Examination of Table III.D reveals that overall private wage and salary employment in the state increased by approximately 285,300 jobs, or 10.3 percent over the 1980-1986 period. Several industries experienced significant job growth in terms of absolute numbers. These industries included rubber and plastics, services, wholesale durables, other retail trade and finance, real estate and insurance.

One caveat to observe when analyzing this industry data is the impact of a MESC reclassification of industry codes from 1983 through 1986 for some manufacturing and nonmanufacturing firms. In the SIC reclassification process, businesses are reviewed periodically for major industry function and product sales. Based upon this review, industry codes may change. Total durable and nondurable wholesale trade employment was significantly increased by the reclassification process, with corresponding decreases in other industry totals. Since the data for the years prior to 1983 do not reflect these changes, the increased employment levels between 1980 and 1986 are not completely due to real job growth. Therefore, although employment in wholesale trade has increased between 1980 and 1986, the magnitude is not as great as is indicated by the figures. However, employment growth in wholesale

trade-durables does appear to be strong since job gains have continued since 1983.

Another caution to observe when analyzing industry data is that industry employment changes may not be indicative of all firms in a particular industry, or for that industry in all geographic areas. For example, much of the significant employment increase experienced in the other transportation equipment industry resulted from a single plant expansion in the Detroit metropolitan area. Therefore, the increase did not represent an across-the-board increase for all firms in that industry throughout the state.

TABLE III.C

AREA INDUSTRY EMPLOYMENT TRENDS

MICHIGAN

INDUSTRY NAME	SIC	PY 1980	PY 1982	PY 1984	PY 1985	PY 1986
Mining	14	12099	9010	10027	10080	10376
Construction	15-17	109965	86695	98144	113251	121798
Food Products	20	47558	45517	45911	45569	46290
Textile Products	22-23	19446	17765	21770	22889	24573
Lumber/Wood Prods.	24	11127	10064	12407	13030	13681
Furniture	25	22611	21213	25650	27165	27346
Paper	26	21431	20063	21051	21396	21214
Printing	27	32843	33136	37444	38050	37764
Chemicals	28	43594	40341	40784	41093	40936
Refining	29	3268	3193	2368	2440	2288
Rubber/Plastics	30	28884	28536	39577	43143	45746
Leather	31	3435	2890	2708	2634	2347
Stone/Clay/Glass	32	18443	15041	17337	17336	16935
Primary Metals	33	65484	48902	53097	50997	48591
Fab. Metals	34	115297	98921	121903	125331	119880
Nonelect. Mach.	35	156107	119502	132886	135130	126927
Elect. Mach.	36	33529	30260	35137	37022	38211
Motor Veh. & Eqpt.	371	326436	285722	334518	342811	328152
Other Trans. Eqpt.	372-379	14695	16883	19530	20604	22242
Instruments	38	13551	12853	14581	14647	14835
Misc. Durables	39	8419	6717	7365	7212	7275
Railroads	40	13708	11258	9830	9122	8535
Trans. Comun. & Ut.	41-49	135001	129604	132352	137826	141167
Wholesale Durables	50	102170	95746	108579	113407	115333
Wholesale Nondur.	51	57340	54568	61689	62659	62857
Department Stores	53	86681	82925	89828	92027	95570
Other Retail Trade	52,54-59	476129	463409	506827	536036	555160
Fin., R.E. and Ins.	60-67	155966	151185	158428	166962	175477
Services	70-89	648037	657269	731365	776749	797093

Source: Michigan Employment Security Commission, CES

Note: Data in Thousands

With these factors in mind, once industries experiencing long-term growth are identified (Table III.D), it is then necessary for human resource planners with agencies providing on-the-job training and short-term classroom training to determine whether employment in these industries continues to grow in the short-run as well. For example, some of the industries in Table III.D, particularly in manufacturing, have not added employment over the last two years or are not expected to grow in the short term. Conversely, other industries experiencing current growth that have not achieved net employment growth over the longer run may simply be reabsorbing a pool of labor which was laid off during the recession of the early 1980's. In addition, firms heavily unionized, particularly those in manufacturing, frequently have to abide by recall rights provisions of their collective bargaining agreements before hiring new workers.

TABLE III.D

LONG RUN
FAVORABLE EMPLOYMENT
INDUSTRIES

MICHIGAN

SIC	INDUSTRY TITLE	CHANGE PY 1980 TO PY 1986	
		NUMBER	PERCENT
	TOTAL, ALL INDUSTRIES	285339	10.3
15-17	CONSTRUCTION	11833	10.8
23	APPAREL, TEXTILE PRODUCTS	5127	26.4
24	LUMBER AND WOOD PRODUCTS	2554	23.0
25	FURNITURE AND FIXTURES	4735	20.9
27	PRINTING AND PUBLISHING	4921	15.0
30	RUBBER, MISC. PLASTIC PRODUCTS	16862	58.4
34	FABRICATED METAL PRODUCTS	4583	4.0
36	ELECTRICAL MACHINERY	4682	14.0
371	TRANSPORTATION EQUIPMENT	1716	0.5
372-379	OTHER TRANSPORTATION EQUIPMENT	7547	51.4
38	MEASURING AND CONSTR. INSTRUMENTS	1284	9.5
41-49	TRANS., COMM., UTILITIES	6166	4.6
50	WHOLESALE-DURABLES	13163	12.9
51	WHOLESALE-NONDURABLES	5517	9.6
53	DEPARTMENT STORES	8889	10.3
52,54-59	OTHER RETAIL TRADE	79031	16.6
60-67	FINANCE, REAL EST., INS.	8682	5.6
70-89	SERVICES	149056	23.0

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

Planners should examine industries with positive long-term employment patterns and continued job growth over the last two years, as those may offer good potential for hiring graduates of training programs. Payroll expansion among such industries will have been more continuous and external recruitment efforts to fill expansion needs may be taking place. Table III.E reflects those long-run growth industries which also recorded job growth over the last two years. Although, all of these industries are not necessarily target industries for newly trained workers, those industries which are currently the best targets for employment and training are services (business, other professional and personal), other retail trade (eating and drinking places), plastic products, department stores and finance, real estate and insurance.

TABLE III.E

FAVORABLE EMPLOYMENT
INDUSTRIES

MICHIGAN

SIC	INDUSTRY TITLE	EMPLOYMENT PY 1985	EMPLOYMENT PY 1986	NUMERIC CHANGE	VERT. PERCENT DIST.
	TOTAL	2177417	2251089	73672	100.0
15-17	CONSTRUCTION	113251	121798	8547	11.6
23	APPAREL, TEXTILE PRODUCTS	22889	24573	1684	2.3
24	LUMBER AND WOOD PRODUCTS	13030	13681	651	0.9
25	FURNITURE AND FIXTURES	27165	27346	181	0.2
30	PLASTIC PRODUCTS	43143	45746	2603	3.5
36	ELECTRICAL MACHINERY	37022	38211	1189	1.6
372-379	OTHER TRANSPORTATION EQUIPMENT	20604	22242	1638	2.2
38	MEASURING AND CONSTR. EQUIP.	14647	14835	188	0.3
41-49	TRANS., COMM., UTILITIES	137826	141167	3341	4.5
50	WHOLESALE-DURABLES	113407	115333	1926	2.6
51	WHOLESALE-DURABLES	62659	62857	198	0.3
53	DEPARTMENT STORES	92027	95570	3543	4.8
52,54-59	OTHER RETAIL TRADE	536036	555160	19124	26.0
60-67	FINANCE, REAL EST., INSURANCE	166962	175477	8515	11.6
70-89	SERVICES	776749	797093	20344	27.6

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

In fact, these industries accounted for nearly 74 percent of the employment growth for the industries reflected in Table III.E. Particularly outstanding is the services industry which registered the fastest rate of growth of any major industry in Michigan over the last decade, due to job gains in business, legal, social and other professional services. Other retail trade industry which include eating and drinking places , food and dairy stores and all other retail establishments, suffered employment losses during the recent recession but rebounded strongly in PY 1985 and PY 1986.

Although reflected in Table III.E, the wholesale trade industry is not targeted, because most of the employment growth indicated resulted from the MESC industry reclassification process. In addition, the construction industry is not targeted due to its highly seasonal and cyclical nature.

INDUSTRY PROJECTIONS

As Table III.F indicates, industry employment projections through PY 1988 show above average job growth in all the targeted industries. Wage and salary employment between PY 1986 and PY 1988 is expected to increase by nearly 1.4 percent, or 53,000 jobs. This growth will be concentrated in the service-producing industries, particularly services, trade and finance, real estate and insurance.

Between PY 1986-1988, services employment is expected to increase by 43,000, representing nearly 81 percent of nonagricultural job growth. Industries within services expected to provide increased job opportunities include business and legal services, social services, (i.e., day care and group homes), and other professional services, (i.e., accounting, bookkeeping and engineering). Overall, the health services industry is also expected to experience some employment increases, although its various sectors should experience widely different growth prospects. The health service industry is expected to grow given the growth and aging of the population, advances in medical technology and public support for life-quality health care. However, there is considerable uncertainty as to how rapid future growth will be and what the employment implications are likely to be given the industry's changing structure as financial incentives for providing and using health services are transformed. The wholesale and retail trade industries are expected to provide additional job opportunities, particularly eating and drinking places, and miscellaneous retail trade, (i.e., drug and liquor stores, sporting goods and florists). Over the two-year period, job gains in services and trade will account for over two-thirds of the employment growth in the service producing industries.

TABLE III.F

INDUSTRY EMPLOYMENT PROJECTIONS

MICHIGAN

(Data in Thousands)

	PY 1986	PY 1987	PY 1988	CHANGE PY 1986 TO PY 1988	
				NUMBER	PERCENT
Total	3667	3688	3720	53	1.4
Goods Producing Industries	1117	1083	1077	-40	-3.6
Manufacturing	985	950	943	-42	-4.3
Construction and Mining	132	133	134	2	1.5
Service Producing Industries	2550	2605	2643	93	3.6
Trans.,Commun.,Utils.	150	151	151	1	0.7
Wholesale Trade	178	180	182	4	2.2
Retail Trade	651	660	670	19	2.9
Finance,Ins.,Real Estate	175	180	185	10	5.7
Services	797	823	840	43	5.4
Government	599	611	615	16	2.7

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

IV. OCCUPATIONAL EMPLOYMENT PROJECTIONS

OCCUPATIONAL TRENDS

The Michigan Employment Security Commission (MESC) generates detailed statistics on projected occupational employment and related information on occupational demand and supply for Michigan and many of its subregions. The appendix of this report contains a detailed table of occupational projections for Michigan for the period 1985-1995, as well as lists of occupations with largest job growth, fastest growth and largest decline.

Note that the occupational tables included in this report deal only with the demand side of the labor market equation, and do not cover the crucial supply-related issues important to the selection of appropriate training programs. Rather, they are intended to introduce the reader to the data and concepts included in the Michigan and Area Occupational Supply/Demand Reports.

Revised supply/demand reports covering Michigan and most substate areas will be available from MESC in Spring 1988, and will include detailed occupational forecasts through 1995. MESC strongly recommends that planners consult the full reports for further, more complete data, and other important information.

According to the most recent projections of the Michigan Employment Security Commission, occupational growth trends over the 1985-95 period are expected to change from the trends of the recent past for some broad occupational groups. Some occupations that expanded rapidly from the early 1970's to the mid-1980's are still expected to grow faster than average through the mid-1990's while others which experienced rapid growth in the past are expected to have slower growth rates.

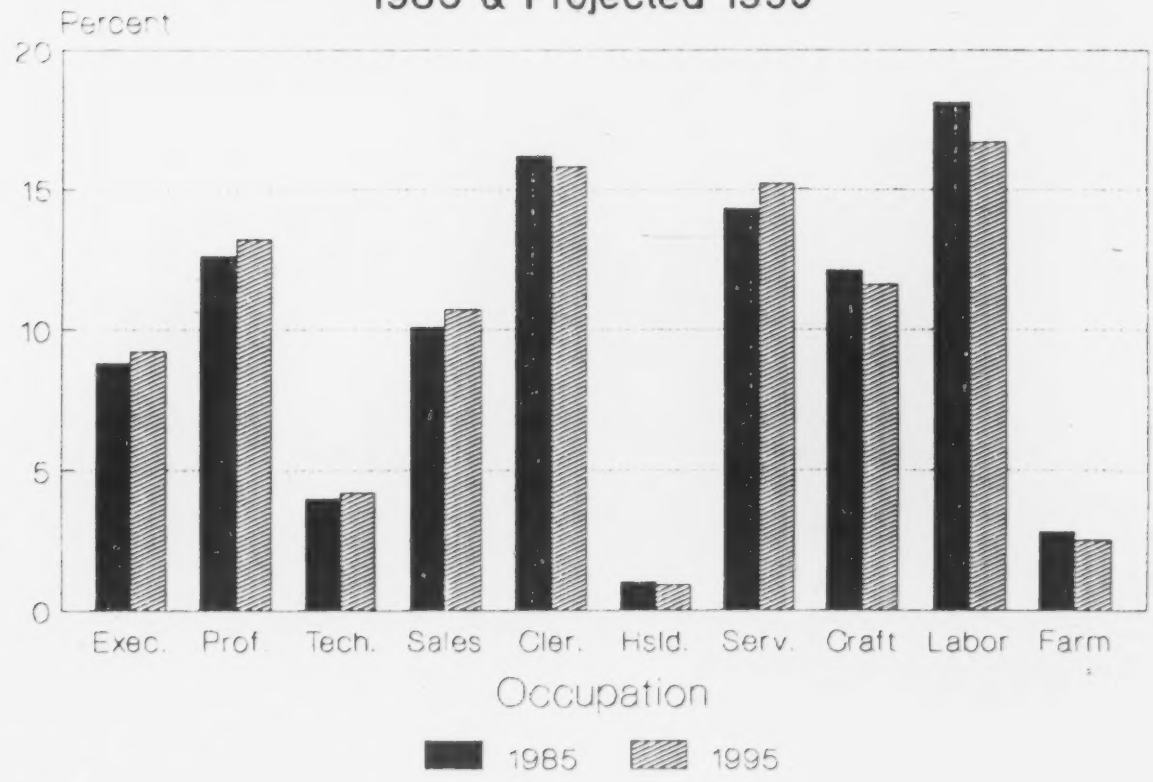
Many occupations that expanded rapidly during the 1970's experienced significant declines during the 1980-82 recession, and are expected to have slower than average growth rates through the mid 1990's. These include clericals, operators-laborers, and craft occupations. These changes result from a projected slowing of total employment growth, from changes in industry trends, and from technological change affecting the occupational structures of many industries.

Employment of workers in private households, on farms, and in forestry and fishery occupations is expected to continue its long-term decline. However, the rate of decline is projected to be considerably slower than the rate of decline over the period 1975-85.

The changing occupational structure in Michigan employment is reflected in the following graph which compares 1985 and projected 1995 occupational distribution. Although most of the major occupational groups, with the exception of farming will experience employment growth between 1985-95, changes in employment concentration will be experienced in every group. None of the changes, however, will be significant enough to alter the size ranking of the major groups.

FIGURE 4

MICHIGAN EMPLOYMENT PROJECTIONS
BY BROAD OCCUPATIONAL GROUP
1985 & Projected 1995



Source: MESC

Over the 1985-95 period, service workers, except private household workers are projected to continue to grow faster than total employment. This occupational group is expected to account for more job growth than any other broad group, increasing its share of total employment from 14.3 percent in 1985 to 15.2 percent in 1995. The large number of new jobs expected to be added by service workers is a result of the continued shift of the economy from goods production to service production.

There are three major occupational groups which have the largest proportion of workers with a college education or specialized post-secondary technical training. These are expected to increase in employment faster than the average for all occupations, thus increasing their share of total employment through 1995. The first of these major groups is executive, administrative, and managerial workers, which is projected to increase by 15.3 percent over the period, compared with a 9.5 percent growth rate for total employment. The demand for these workers is expected to increase rapidly, as firms increasingly depend on trained management specialists. The second major group with specialized training which is expected to increase its share of total employment is comprised of professional workers. Professional workers are expected to increase by 21,710 over the decade, or 14.5 percent, as many occupations including computer-related engineering and health specialties are projected to surge. The third group, technicians and related workers is expected to experience one of the fastest growth rates (16.1 percent) of all the major occupational groups.

The number of sales workers is also projected to increase by 16.1 percent over the 1985-95 period, adding 21,590 jobs.

The five remaining major occupational categories are expected to experience below average growth rates, with two of the groups expected to continue their long-term decline. Administrative support workers, including clerical, is projected to grow more slowly than average through the mid 1990's. This group is expected to add 21,310 jobs over the 1985-95 period. The spread of computerized office and related equipment, as well as other related office automation has affected the employment of clerical workers and should continue at an accelerated pace through the mid 1990's. The automation of clerical tasks should slow the growth of many detailed occupations and cause others, such as payroll and timekeeping clerks to experience declines.

Precision production, craft,and repair worker employment is expected to grow more slowly than the average for all occupations from 1985 to 1995. Their share of total employment is expected to decline by half a percentage point over the decade, from 12.1 to 11.6 percent. The employment of these workers is closely related to the growth of the construction and manufacturing industries, in which these workers are most concentrated. Manufacturing is expected to grow slowly, and construction is projected to show only average growth over the ten-year period, thereby slowing the growth of the precision production, craft, and repair occupations.

Employment of operators, fabricators, and laborers is projected to increase by only 0.8 percent from 1985-95. Nevertheless, this represents a change from the most recent period, when employment for these workers actually declined. Shrinking employment in many of the manufacturing industries in which these workers were concentrated was a result of the 1980-82 recession period. This is most notably reflected in the significant decline in the manufacturing share of nonagricultural employment, from 31.9 percent in 1979 to 28.1 percent in 1985. Over the 1985-95 period, manufacturing is expected to grow slowly. An array of new technologies in manufacturing and robotics is expected to affect many detailed occupations in this major occupational group, including machine operators, assemblers, and industrial truck and tractor operators.

OCCUPATIONS WITH THE LARGEST JOB GROWTH

Table IV.A lists 20 Michigan occupations with the largest projected job growth for the period 1985-95. These occupations account for approximately 44 percent of the projected total job growth between 1985-95. In general, these occupations are already numerically large, and most have projected rates of growth that are average or higher. However, several are projected to grow more slowly than average, but due to their current employment size will add significant numbers of new jobs over the 1985-95 period. These occupations include janitors, general office clerks and secretaries. Collectively these 20 fastest-growing occupations accounted for nearly 26 percent of total employment in 1985, a proportion expected to increase to over 27 percent in 1995.

Note that the detailed occupations in the following tables do not include residual ("All Other") categories for the major occupational groups. The residual categories are often very large because they contain a wide range of job titles and therefore account for much of the group's employment.

TABLE IV.A

MICHIGAN

OCCUPATIONS WITH LARGEST JOB GROWTH

1985-95

OCCUPATION	EMPLOYMENT CHANGE 1985-1995	
	NUMBER	PERCENT
Total Occupations	374675	9.4
Registered Nurses	16908	32.0
Salespersons, Retail	16685	13.0
Cashiers	16344	22.7
Waiters & Waitresses	12328	18.9
Truck Drivers	11888	14.3
Computer Programmers	9172	50.2
Nursing Aides & Orderlies	9039	18.0
Accountants & Auditors	7237	24.9
Janitors & Cleaners In. Man.	7038	7.7
Teachers, Elementary	6633	17.2
Guards	6120	22.6
Food Prep. & Serv. Workers	5777	19.3
Lawyers	5544	30.9
General Office Clerks	5505	6.1
Secretaries	5390	5.1
Food Preparation Workers	5341	18.0
Cooks, Ex. short Order	5303	17.6
Auto & Motorcycle Mechanic	5115	18.9
Comp., Sys. Analysts, EDP	4721	37.6
Hand Packers & Packagers	4209	29.0

FASTEST GROWING OCCUPATIONS

Table IV.B shows the 20 fastest growing occupations. These occupations provide a different perspective on future occupational employment changes. Most of these occupations are increasing rapidly from relatively small employment levels and, therefore, are not included in the list of occupations with the largest job growth. Computer programmers and computer systems analysts are notable exceptions.

Nearly one-third of the fastest growing occupations in Michigan are aircraft and travel related. This is primarily due to significant expansion at Detroit Metropolitan Airport, as well as the general impact of deregulation on the air travel industry. Another noteworthy development is that approximately two-thirds of the fastest growing occupations require post-secondary and specialized technical training.

TABLE IV.B

MICHIGAN

FASTEST GROWING OCCUPATIONS

1985-95

OCCUPATION	EMPLOYMENT CHANGE 1985-95	
	NUMBER	PERCENT
Flight Attendants	665	76.4
Transp. Agents	207	62.8
Aircraft Pilots & Flt. Engrs.	1055	60.0
Secur. & Fin. Serv. Sales	3065	51.7
Computer Programmers	9172	50.2
Optometrists	638	49.4
Reserv. & Trans. Ticket Agents	779	48.0
Airc. Mech. & Eng. Specialists	587	47.0
Actuaries	71	44.9
Electr. & Electro. Engrs.	3197	44.0
Data Process. & Eq. Repairers	427	39.8
Camera Oprs., TV & Movie	91	38.6
Computer Systems Analysts, EDP	4721	37.6
Paralegal Personnel	406	37.3
Prod., Direct., Actors, & Others	210	36.4
Law Clerks	541	36.3
Medical Assistants	2338	36.0
Employment Intevrs.	617	35.9
Electr. & Electro. Techns.	2602	35.5
Travel Clerks	92	34.9
Travel Agents	960	34.5

OCCUPATIONS WITH THE MOST EMPLOYMENT DECLINE

Table IV.C shows the 20 occupations expected to experience the most employment decline in Michigan. Approximately sixty percent of the occupations are industrial, blue collar jobs. These jobs are concentrated in industries which have suffered employment losses because of foreign competition and technological improvements. Other occupations expected to be adversely affected by technological changes are stenographers, statistical clerks and data-entry keyers.

TABLE IV.C

MICHIGAN

OCCUPATIONS WITH MOST EMPLOYMENT DECLINE

1985-95

OCCUPATION	EMPLOYMENT DECLINE 1985-95	
	NUMBER	PERCENT
Mach. Tool Cut. Oprs.	5708	24.0
Assemblers & Fabricators, Misc.	5435	6.3
Mach. Forming Oprs.	5089	24.0
Industrial Truck & Tractor Oprs.	4857	19.3
Farmers	3954	11.0
Farm Workers	3126	8.9
Tool & Die Makers	2851	11.6
Stenographers	2583	41.8
College & University Faculty	2273	10.6
Stock Clerks, Strm. & Ware.	1839	7.7
Cleaners & Serv., Pvt. Hshld.	1839	8.2
Data Entry Keyers, Ex. Comp.	1506	11.6
Blue Collar Workers / Suprvs.	1486	2.2
Forging Mach. Set-up Oprs.	1482	26.8
Grinding Mach. Set-up Oprs.	1204	13.5
Lathe Mach. Set-up Oprs.	1200	13.2
Drill Mach. Set-up Oprs.	1026	15.4
Press Mach. Set-up Oprs.	841	18.0
Inspectors, Testers & Graders, Oth.	765	2.8
Statistical Clerks	735	22.2

V. JTPA TARGET POPULATION GROUPS

This chapter contains tables that are designed to provide employment and training planners with the basic information on target population groups as specified in Title II of the Job Training Partnership Act (JTPA). Title II mandates job training programs for economically disadvantaged and other individuals facing barriers to employment to facilitate their entry into permanent private sector employment. This chapter has been designed to meet the planning guidelines established by the Michigan Department of Labor, Bureau of Employment and Economic Development, in order to implement the provisions of Title II.

The tables in Section I contain information on the eligible population in the service delivery area. The eligible population consists of those individuals who are economically disadvantaged. This is the primary target group as JTPA legislation requires that at least 90 percent of participants served be economically disadvantaged. The tables provide 1985 demographic information on the local area's economically disadvantaged population and labor force. In addition, cross-tabulated information by age, race and sex on the population and labor force is provided. This information may be used to evaluate the local area's universe of need in terms of overall funding and distribution of services. The information is also a necessary component in the determination of program planning and delivery.

The second section of the chapter includes tables which are presented to assist in analyzing other target population groups that may be served under the JTPA "ten percent provision". This provision stipulates that up to ten percent of the participants in all training programs may be individuals who are not economically disadvantaged but have encountered barriers to employment. The tables within this section provide estimates for those groups specifically identified in the legislation. However, the legislation does not limit its coverage to those specifically identified. The information in these tables may be used to evaluate those groups within the "ten percent provision" category most in need of training services.

The third section in the chapter contains special tables that address JTPA operational and equity issues. The first table reflects the ratio of government to wage and salary employment. This information is used to regulate the distribution of participants in on-the-job training between private and government employment. The second table reflects the ratio of private employment to population. This information is one of several criteria used to justify administrative costs in excess of the 30 percent limitation. The last table in the section provides information on welfare recipients and may be useful for additional program planning.

For a more complete description of the source data and methodology, please refer to the following chapter on table descriptions.

SECTION 1

JTPA TITLE II
ELIGIBLE POPULATION

TABLE V.A

TITLE II ELIGIBLE POPULATION
LABOR FORCE ADJUSTED ECONOMICALLY DISADVANTAGED
1985

MICHIGAN

	TOTAL ECONOMICALLY DISADVANTAGED	LABOR FORCE ADJUSTED ECONOMICALLY DISADVANTAGED	
		NUMBER	PERCENT DISTRIBUTION
Total 14+ (1)	1241819	747673	100.0
Male	477203	343967	46.0
Female	764616	403706	54.0
Age Group			
14-15	55983	N.A.	N.A.
16-19	128039	74125	9.9
20-21	75601	55199	7.4
22-54	734955	556328	74.4
55-64	110363	51579	6.9
65+	136878	10442	1.4
Race/Ethnic			
White	833390	521702	69.8
Black	358919	195819	26.2
American Indian or Alaskan Native	10953	6407	0.9
Asian or Pacific Islander	7447	4532	0.6
Hispanic	31110	19212	2.6

(1) Note: Civilian labor force data by definition exclude 14 and 15 year olds, therefore, demographic and age related unemployment data reflect only those 16 years old and older.

Note: Details may not add to totals due to rounding.

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

ECONOMICALLY DISADVANTAGED
ELIGIBLE POPULATION

1985

SDA: MICHIGAN

TOTAL	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	29566.	23342.	537.	407.	2131.	55983.
	16 - 19	76717.	44934.	1589.	520.	4279.	128039.
	20 - 21	51293.	21229.	755.	425.	1899.	75601.
	22 - 44	423743.	188517.	6326.	4667.	17031.	640284.
	45 - 54	64771.	26131.	603.	444.	2722.	94671.
	55 - 64	78536.	29067.	461.	357.	1942.	110363.
	65 +	108764.	25699.	682.	627.	1106.	136878.
	TOTAL	833390.	358919.	10953.	7447.	31110.	1241819.

MALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	15126.	11007.	294.	206.	1063.	27696.
	16 - 19	35679.	18115.	596.	200.	2229.	56819.
	20 - 21	21536.	6564.	243.	205.	632.	29180.
	22 - 44	170999.	66885.	2453.	2191.	6971.	249499.
	45 - 54	28339.	6818.	249.	186.	1247.	36839.
	55 - 64	28528.	10356.	190.	169.	963.	40206.
	65 +	29285.	6906.	222.	195.	356.	36964.
	TOTAL	329492.	126651.	4247.	3352.	13461.	477203.

FEMALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	14440.	12335.	243.	201.	1068.	28287.
	16 - 19	41038.	26819.	993.	320.	2050.	71220.
	20 - 21	29757.	14665.	512.	220.	1267.	46421.
	22 - 44	252744.	121632.	3873.	2476.	10060.	390785.
	45 - 54	36432.	19313.	354.	258.	1475.	57832.
	55 - 64	50008.	18711.	271.	188.	979.	70157.
	65 +	79479.	18793.	460.	432.	750.	99914.
	TOTAL	503898.	232268.	6706.	4095.	17649.	764616.

ECONOMICALLY DISADVANTAGED
LABOR FORCE

1985

SDA: STATE OF MICHIGAN

TOTAL	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0.	0.	0.	0.	0.	0.
	16 - 19	49625.	21132.	676.	279.	2412.	74124.
	20 - 21	40352.	12819.	451.	302.	1274.	55198.
	22 - 44	337612.	133301.	4517.	3463.	12556.	491449.
	45 - 54	47615.	14624.	449.	293.	1896.	64877.
	55 - 64	37746.	12466.	240.	147.	980.	51579.
	65 +	8752.	1478.	74.	47.	91.	10442.
	TOTAL	521702.	195820.	6407.	4531.	19209.	747669.

MALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0.	0.	0.	0.	0.	0.
	16 - 19	22869.	8930.	245.	119.	1276.	33439.
	20 - 21	17411.	4633.	125.	163.	493.	22855.
	22 - 44	160631.	54488.	2056.	1944.	6198.	225317.
	45 - 54	25902.	4658.	231.	152.	1056.	31999.
	55 - 64	19343.	5655.	138.	93.	624.	25853.
	65 +	3983.	407.	44.	25.	42.	4501.
	TOTAL	250169.	78771.	2839.	2496.	9689.	343964.

FEMALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0.	0.	0.	0.	0.	0.
	16 - 19	26756.	12202.	431.	160.	1136.	40685.
	20 - 21	22911.	8186.	326.	139.	781.	32343.
	22 - 44	176981.	78813.	2461.	1519.	6358.	266132.
	45 - 54	21713.	9966.	218.	141.	840.	32878.
	55 - 64	18403.	6811.	102.	54.	356.	25726.
	65 +	4769.	1071.	30.	22.	49.	5941.
	TOTAL	271533.	117049.	3568.	2035.	9520.	403705.

SECTION 2

JTPA
TEN PERCENT
TARGET POPULATION GROUPS

TADLE V.D

HANDICAPPED POPULATION

MICHIGAN*

	TOTAL	IN LABOR FORCE		NOT IN LABOR FORCE ABLE TO WORK	
		TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Total 16+	878194	232983	54536	645074	300012
Male	411381	154101	28567	257210	82137
Female	466813	78882	25969	387864	217875
16-19	20950	7846	4990	13085	11821
20-21	14608	7652	2886	6945	5136
22-44	193897	105670	28706	88186	66941
45-54	123319	48814	8993	74480	49988
55-64	198665	48114	6444	150524	71879
65+	326755	14881	2517	311854	94247
White	719846	193444	41625	526295	224057
Black	140474	33786	11009	106674	68101
Am Indian	5022	1625	669	3389	2122
Asian Pacific	1913	519	59	1394	779
Hispanic	10939	3609	1174	7322	4953

*Source: 1980 Census

TABLE V.E

HIGH SCHOOL DROPOUTS

MICHIGAN*

	1980 POPULATION		HIGH SCHOOL DROPOUTS	
	TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Total 16+	6731411	1029464	1804990	435905
Male	3215305	366550	870381	145858
Female	3516106	662914	934609	290047
16-21	1071888	243413	134057	46881
22-64	4804002	621255	1136986	265745
65+	855521	164796	533947	123279
White	5788873	739933	1455963	294884
Black	781737	251197	293237	122709
Am. Indian	28028	8106	10536	3863
Asian Pacific	37273	6524	5854	1628
Hispanic	95500	23704	39400	12821

*Source: 1980 Census

TABLE V.F

TEENAGE PARENTS
BY SERVICE DELIVERY AREA*

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	565	316
Berrien-Cass-Van Buren	780	580
Lansing Tri-County	900	500
City of Detroit	4360	2920
Thumb Area	676	299
CAPC	462	230
Region II	780	400
Kalamazoo-St. Joseph	872	402
Kent County	1220	660
Livingston-Washtenaw	560	140
Macomb-St. Clair	1040	400
Saginaw-Midland-Bay	1218	677
Downriver-Monroe	1207	447
Oakland County (Balance)	703	225
Muskegon-Oceana	560	420
Allegan-Ottawa	454	188
Pontiac Area	670	250
Genesee-Shiawassee	1838	1094
Wayne County (Balance)	1100	460
Region 7B	380	160
West Central Michigan	400	260
Northeast Michigan	360	260
Northwest Michigan	500	260
Eastern Upper Peninsula	194	95
Central Upper Peninsula	558	243
Western Upper Peninsula	188	29
State of Michigan	22545	11915

*Source: 1980 Census

TABLE V.G

LIMITED ENGLISH PROFICIENCY
BY SERVICE DELIVERY AREA*

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	580	196
Berrien-Cass-Van Buren	1180	500
Lansing Tri-County	2320	1100
City of Detroit	13960	4740
Thumb Area	557	174
CAPC	475	240
Region II	960	300
Kalamazoo-St. Joseph	691	341
Kent County	2500	800
Livingston-Washtenaw	1480	400
Macomb-St. Clair	6780	1220
Saginaw-Midland-Bay	1776	766
Downriver-Monroe	2441	537
Oakland County (Balance)	5306	1378
Muskegon-Oceana	300	100
Allegan-Ottawa	999	475
Pontiac Area	1256	559
Genesee-Shiawassee	1509	392
Wayne County (Balance)	7460	2020
Region 7B	380	80
West Central Michigan	260	140
Northeast Michigan	260	120
Northwest Michigan	520	140
Eastern Upper Peninsula	192	69
Central Upper Peninsula	739	280
Western Upper Peninsula	636	215
State of Michigan	55517	17282

*Source: 1980 Census

TABLE V.H

ALCOHOLICS AND ADDICTS
SUBSTANCE ABUSE ADMISSIONS
FISCAL YEAR 1985/1986 (1)

AREA	TOTAL ADMISSIONS
Michigan	53281
Barry	157
Branch	188
Calhoun	485
SDA TOTAL	830
Berrien	378
Cass	237
Van Buren	395
SDA TOTAL	1010
City of Detroit	9208
Downriver C.C.	NA
Monroe	483
SDA TOTAL	483
Genesee	3594
Shiawassee	330
SDA TOTAL	3924
Kent	2376
Jackson	491
Hillsdale	112
Lenawee	396
SDA TOTAL	999
Kalamazoo	1776
St. Joseph	350
SDA TOTAL	2126
Clinton	284
Eaton	309
Ingham	1770
SDA TOTAL	2363

TABLE V.H, (Continued)
ALCOHOLICS AND ADDICTS

AREA	TOTAL ADMISSIONS
Livingston	696
Washtenaw	1462
SDA TOTAL	2158
Macomb	3589
St. Clair	600
SDA TOTAL	4189
Muskegon	854
Oceana	114
SDA TOTAL	968
Oakland (2)	4962
Allegan	420
Ottawa	417
SDA TOTAL	837
Pontiac Area	NA
Saginaw	684
Midland	243
Bay	452
SDA TOTAL	1379
Wayne (3)	8022
Arenac	90
Clare	184
Gladwin	91
Iosco	68
Ogemaw	41
Roscommon	88
SDA TOTAL	562
Huron	126
Lapeer	365
Sanilac	119
Tuscola	200
SDA TOTAL	810

TABLE V.H, (Continued)
ALCOHOLICS AND ADDICTS

AREA	TOTAL ADMISSIONS
Gratiot	197
Ionia	140
Isabella	191
Montcalm	125
SDA TOTAL	653
Alcona	40
Alpena	153
Cheboygan	89
Crawford	33
Montmorency	41
Oscoda	16
Otsego	69
Presque Isle	70
SDA TOTAL	511
Antrim	104
Benzie	43
Charlevoix	201
Emmet	148
Grand Traverse	356
Kalkaska	69
Leelanau	56
Manistee	122
Missaukee	31
Wexford	188
SDA TOTAL	1318
Lake	32
Mason	125
Mecosta	106
Newaygo	268
Osceola	53
SDA TOTAL	584
Alger	88
Delta	250
Dickinson	165
Marquette	961
Menominee	111
Schoolcraft	103
SDA TOTAL	1678

TABLE V.H, (Continued)
ALCOHOLICS AND ADDICTS

AREA	TOTAL ADMISSIONS
Chippewa	320
Luce	122
Mackinac	129
SDA TOTAL	571
Baraga	170
Gogebic	131
Houghton	282
Iron	143
Keweenaw	13
Ontonagon	21
SDA TOTAL	760

(1) Source: Michigan Department of Public Health

(2) Estimates for county only, not SDA

(3) Does not include City of Detroit

TABLE V.I

OFFENDERS
BY SERVICE DELIVERY AREA(1)
SEPTEMBER 1987

AREA	TOTAL	PAROLEES	CORRECTION CENTER
Barry-Branch-Calhoun	578	111	467
Berrien-Cass-Van Buren	875	240	635
Lansing Tri-County	908	158	750
City of Detroit	8608	2025	6583
Thumb Area	226	44	182
CAPC	528	61	467
Region II	1773	410	1363
Kalamazoo-St. Joseph	924	189	735
Kent County	1730	377	1353
Livingston-Washtenaw	1306	306	1000
Macomb-St. Clair	1068	249	819
Saginaw-Midland-Bay	1195	235	960
Downriver-Monroe((2))	274	68	206
Oakland County((2))	3321	745	2576
Muskegon-Oceana	1063	248	815
Allegan-Ottawa	344	77	267
Pontiac Area	NA	NA	NA
Genesee-Shiawassee	2122	393	1729
Wayne County((2))	1736	450	1286
Region 7B	150	39	111
West Central Michigan	244	60	184
Northeast Michigan	177	47	130
Northwest Michigan	379	94	285
Eastern Upper Peninsula	94	16	78
Central Upper Peninsula	318	75	243
Western Upper Peninsula	76	19	57
State of Michigan	30017	6736	23281

(1) Michigan Department of Corrections.
Data does not reflect total inmate population.

(2) Estimates for county only, not consortium.

TABLE V.J

VETERANS
BY SERVICE DELIVERY AREA*

	VETERAN POPULATION		VETERAN LABOR FORCE	
	TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	28639	2444	23113	1482
Berrien-Cass-Van Buren	33820	2840	28140	1660
Lansing Tri-County	46120	2740	39740	1700
City of Detroit	126740	18420	92960	8580
Thumb Area	22058	2140	18064	1344
CAPC	21481	1760	17755	1031
Region II	33960	2460	28580	1420
Kalamazoo-St. Joseph	31221	1846	26909	1171
Kent County	52100	3280	43420	1480
Livingston-Washtenaw	39760	2160	34800	1160
Macomb-St. Clair	108160	5300	94040	3020
Saginaw-Midland-Bay	48239	3998	39459	2253
Downriver-Monroe	64996	3738	54820	1867
Oakland County (Balance)	103348	3444	91159	2170
Muskegon-Oceana	23340	2080	19000	1200
Allegan-Ottawa	26416	1639	22568	919
Pontiac Area	27339	2028	23354	1212
Genesee-Shiawassee	64023	4673	52255	2573
Wayne County (Balance)	100360	4400	85640	2380
Region 7B	17300	2060	11340	1100
West Central Michigan	15580	1900	11360	940
Northeast Michigan	15320	1920	11160	1080
Northwest Michigan	26240	2940	19760	1560
Eastern Upper Peninsula	6289	682	4845	424
Central Upper Peninsula	27172	2862	21265	1672
Western Upper Peninsula	12153	1468	8053	640
State of Michigan	1122174	85222	923559	46038

*Source: 1980 Census

TABLE V.K

DISPLACED HOMEMAKERS
BY SERVICE DELIVERY AREA*

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	1480	996
Berrien-Cass-Van Buren	2220	1680
Lansing Tri-County	2200	1460
City of Detroit	29560	23420
Thumb Area	1182	853
CAPC	787	533
Region II	1920	1040
Kalamazoo-St. Joseph	1054	739
Kent County	2520	1560
Livingston-Washtenaw	1220	540
Macomb-St. Clair	4860	2400
Saginaw-Midland-Bay	3258	2290
Downriver-Monroe	3562	1921
Oakland County (Balance)	3481	1509
Muskegon-Oceana	1440	880
Allegan-Ottawa	778	541
Pontiac Area	1812	1109
Genesee-Shiawassee	5331	3752
Wayne County (Balance)	6080	3320
Region 7B	960	560
West Central Michigan	840	480
Northeast Michigan	720	480
Northwest Michigan	1200	700
Eastern Upper Peninsula	342	219
Central Upper Peninsula	1157	707
Western Upper Peninsula	798	464
State of Michigan	80762	54153

*Source: 1980 Census

TABLE V.L

DISLOCATED WORKERS
BY RACE, AGE, SEX
MARCH 1984

MICHIGAN

	TOTAL	WHITE	BLACK	OTHER
Total				
Total All Ages	210814	182521	25741	2552
16-17	73	44	27	2
18	98	67	29	3
19	982	883	85	14
20-21	7883	7239	574	70
22-24	21127	18934	1981	212
25-44	116491	100561	14341	1589
45-54	33017	27877	4715	424
55-64	27348	23361	3762	226
65+	3795	3555	227	12
Female				
Total all Ages	70908	59876	10407	895
16-17	27	14	14	0
18	38	25	13	0
19	325	291	30	5
20-21	2645	2412	214	28
22-24	6685	5875	759	64
25-44	38788	32414	5993	557
45-54	11996	9975	1906	161
55-64	8968	7512	1408	71
65+	1437	1359	70	9

Source: Michigan Employment Security Commission

SECTION 3

JTPA
SPECIAL
TABLES

TABLE V.M

RATIO OF CIVILIAN GOVERNMENT
TO WAGE AND SALARY EMPLOYMENT
BY SERVICE DELIVERY AREA

AREA	TOTAL	PRIVATE	GOVERNMENT	PERCENT
Barry-Branch-Calhoun	75250	58175	17075	23
Berrien-Cass-Van Buren	86950	72450	14500	17
Lansing Tri-County	197300	134100	63200	32
City of Detroit	NA	NA	NA	NA
Thumb Area	46725	34225	12500	27
CAPC	56100	41000	15100	27
Region II	89400	73350	16050	18
Kalamazoo-St. Joseph	121550	102475	19075	16
Kent County	236825	214950	21875	9
Livingston-Washtenaw	179400	127600	51800	29
Macomb-St. Clair	301500	256900	44600	15
Saginaw-Midland-Bay	151300	129900	21400	14
Downriver-Monroe	NA	NA	NA	NA
Oakland County(1)	544500	498800	45700	8
Muskegon-Oceana	59950	49875	10075	17
Allegan-Ottawa	87650	75150	12500	14
Pontiac Area	NA	NA	NA	NA
Genesee-Shiawassee	194900	168125	26775	14
Wayne County(1)	929000	798800	130200	14
Region 7B	27300	19125	8175	30
West Central Michigan	30950	20700	10250	33
Northeast Michigan	32525	25200	7325	23
Northwest Michigan	77825	63850	13975	18
Eastern Upper Peninsula	14325	8700	5625	39
Central Upper Peninsula	58050	42575	15475	27
Western Upper Peninsula	25125	16225	8900	35
State of Michigan(2)	3639000	3042000	597000	16

(1) Estimates for county only, not consortium.

(2) Sum of areas is less than Michigan total primarily due to the exclusion of Monroe data.

NA:Not Applicable

TABLE V.N

RATIO OF PRIVATE EMPLOYMENT TO POPULATION
BY SERVICE DELIVERY AREA

AREA	PERCENT
United States	34
State of Michigan(1)	33
Service Delivery Areas	
Barry-Branch-Calhoun	26
Berrien-Cass-Van Buren	26
Lansing Tri-County	32
City of Detroit(2)	NA
Thumb Area	17
CAPC	21
Region II	32
Kalamazoo-St. Joseph	37
Kent County	45
Livingston-Washtenaw	34
Macomb-St. Clair	31
Saginaw-Midland-Bay	32
Downriver-Monroe(2)	NA
Oakland County	49
Muskegon-Oceana	28
Allegan-Ottawa	29
Pontiac Area(2)	NA
Genesee-Shiawassee	33
Wayne County	37
Region 7B	15
West Central Michigan	16
Northeast Michigan	22
Northwest Michigan	29
Eastern Upper Peninsula	19
Central Upper Peninsula	24
Western Upper Peninsula	18

(1) Sum of areas is less than Michigan total primarily due to the exclusion of Monroe data.

(2) Estimates for county only, not consortium.

NA: Not Applicable

TABLE V.0

WELFARE REGISTRANTS

MICHIGAN

OCTOBER 1987

	Registrants
Total	326514
Male	98856
Female	227658
14-15	7
16-19	43102
20-21	20597
22-44	220129
45-54	27613
55-64	14296
65+	770
White	155208
Black	158620
American Indian	1475
Other	3498
Hispanic	7713

Source: Michigan Department of Social Services, AFDC and GA Registrants (includes students and elderly)

VI. TABLE DESCRIPTIONS

Following is a discussion of basic data elements presented in this report. The data elements are divided into several major groups: 1. general planning information which covers data on industry, occupation and labor force; 2. the eligible population which covers the economically disadvantaged; 3. those target groups covered by the Title II "ten percent provision"; 4. special JTPA tables which cover data specifically required in the legislation. Those tables based on census data were generated from Summary Tape File 4 (STF-4) micro files. Following each data element is a discussion of issues involved, particularly definitions and data availability.

General Planning Information Tables

Civilian Labor Force

Civilian labor force estimates for PY 1988 are available for the state, labor market areas and service delivery areas. Except for the state, information is available for mutually exclusive categories by sex, age and race.

Total labor force, employment and unemployment forecasts were based upon area population and industry employment trends. Distributions by age, race, sex and geographic detail were derived using 1980 census information.

Private Industry Employment Analysis

This information is based on the ES-202 listing of all employers covered by the Michigan Employment Security Act. This listing covers over 90 percent of all employers doing business in Michigan. The major groups which are wholly or partially excluded are railroad employees, commission sales workers, unpaid family workers and government.

Industry employment figures are provided for the total SDA. In some instances, information for counties within a multi-county SDA may be available upon request. Since this data is not available below the county level, sub-county SDA's are provided with their respective county level information. Average employment levels are presented by two digit Standard Industrial Classification Codes for the latest quarter available. The absolute change in employment over the year is also shown. Data for some industries have been excluded to prevent disclosure of confidential information. Since this employment data represents the most current count of jobs by place of work at the county level, it is useful in analyzing local area employment structure and trends.

Title II Eligible Population Tables

JTPA Title II Eligible Population

This table contains estimates of the economically disadvantaged population and labor force in 1985. Further detail, cross-tabulated by age, race and sex is also provided. The data were developed by linking forward the 1980 Census information using the March 1986 Current Population Survey for Michigan. This table provides a profile of the disadvantaged adjusted by age/race/sex for potential labor force participation. That is, the last column in the table depicts the disadvantaged assuming that they were to participate in the labor force to the same extent as the general population. This is an important planning guide since it more closely reflects the disadvantaged who are likely to be active in the job market and, therefore, to avail themselves of JTPA services. This table provides demographic detail for each service delivery area in total. County breakouts will be available only as percent distributions of SDA totals.

Handicapped

A handicapped individual is defined as an individual who has a physical or mental disability which for such individual constitutes or results in a substantial handicap to employment. The information in this table is derived from 1980 Census data. The table presents demographic characteristics on the total handicapped population. Additional information is provided for both total and economically disadvantaged handicapped individuals, in the labor force and not in the labor force but able to work. Census information for the handicapped reflect public transportation disability and is only available for those labor force attached individuals 16 years and older. Persons are identified as having a public transportation disability if they had a health condition which had lasted six months or more and which made it difficult or impossible for them to use buses, trains, subways or other forms of public transportation. Information in the table is only available for the total SDA.

School Dropouts

In addition to the ten percent provision, services to school dropouts are also mandated under Section 203(b),3 as an "equitable service" item and under Section 205(b),1 as a priority item. According to JTPA legislation a school dropout is an individual who is: 1) not attending any school and is not subject to a compulsory attendance law, and 2) who has not received a secondary school diploma or a certificate from a program of equivalency for such a diploma.

The information in this table is derived from 1980 Census data, and provides demographic characteristics for persons 16 years and older in the general population as well as the school dropout population in 1980. In addition, for both categories information is provided on those who are economically disadvantaged. Information in the table is only available for the total SDA.

Welfare Registrants

Information in this table may be useful for additional program planning needs. The table is based on information from the Michigan Department of Social Services and represents as of September 1, 1986 an actual count of individuals receiving financial support from the Aid to Families with Dependent Children and General Assistance programs. The information is provided by sex, race and age for each service delivery area on welfare registrants. Registrants are recipients who meet the worker requirement and must participate in training as well as work assignment. Information in the table is only available for the total SDA.

Dislocated Workers

Information in this table is provided to assist in the planning of training programs under JTPA Title III. Information on individuals unemployed for 15 weeks or more from the Current Population Survey for Michigan, March 1984, was used as an estimate for dislocated workers. The distribution of dislocated workers by area and demographic characteristics was based on claimant data.

Title II - Ten Percent Provision Target Groups

Teenage Parents

The information in this table is based on 1980 Census data. Although teenage parents may be defined as teenagers aged 14-19 with dependent children, census data is only available for 15-19 year olds with dependent children. This table reflects the total teenage parent population as well as those economically disadvantaged for each service delivery area.

Limited English Language Proficiency

The information in this table is based on 1980 Census data on ability to speak English. This information is derived from responses to question 13c in the census where persons who reported they spoke a language other than English where asked to characterize their ability to speak English. These responses are extremely subjective since they are based on the respondent's own perception.

Information is provided for each SDA on total persons as well as economically disadvantaged persons in this target group.

Alcoholics and Addicts

This table reflects data on admissions to substance abuse treatment programs and is generated by the Michigan Department of Public Health. Since information was only available at the county level, data for city level service delivery areas is not provided.

Offenders

The term "offender" means any adult or juvenile who is or has been subject to any stage of the criminal justice process for whom services under JTPA may be beneficial or who requires assistance in overcoming artificial barriers to employment resulting from a record of arrest or conviction. This table presents actual count data from the Michigan Department of Corrections. The table reflects parolees and residents of correction centers as of September 1987 by county from which sentenced. This information does not include offenders in state prisons. This information does not include offenders in local jails, juvenile courts or the federal facility in Milan. Since information was only available at the county level, data for city level service delivery areas are not provided.

Veteran Population and Labor Force

The information in this table is based on 1980 Census data. The term "veteran" as defined by JTPA is an individual who served in the active military, naval, or air service, and who was discharged or released there from under conditions other than dishonorable.

According to 1980 Census data, more than one-third of all males 16 years and older are veterans. Since, a population estimate of all veterans will significantly overstate service needs, additional information is provided reflecting labor force attachment as well as those veterans in the population and labor force who are economically disadvantaged.

Displaced Homemakers

The following statement represents an updated definition for displaced homemakers consistent with legislation and data availability. A displaced homemaker is an individual who is:

1. 35-62 years of age
2. divorced, separated or widowed
3. currently not employed
4. has not been employed within the last five years

These characteristics are cross-tabulated from 1980 Census data to arrive at a more current estimate of "displaced homemakers" in both definitional and data terms. Information in the table is only available for the total SDA.

Older Workers/Older Individuals

Older workers are defined as those 55 years of age and over. Services are mandated in two sections of JTPA; Section 124 and the ten percent provision of Title II. Section 124 refers to disadvantaged older individuals, and is presented as a subset of the economically disadvantaged information in Table I. The ten percent provision refers

to all older workers, and is a subset of the civilian labor force data in Table 3.

Special JTPA Tables

Ratio of Civilian Government to Wage and Salary Employment

This ratio is used to regulate the distribution of participants in on-the-job-training (OJT) between private and government employment. The information is derived from the Bureau of Labor Statistic's 790 Employment Survey data base generated by MESC-Research and Statistics. The data base is a monthly employment survey of establishments by place of work and does not include agricultural or self-employment. The wage and salary employment estimates, based on place of work are used rather than total employment estimates from the census which are based on place of residence. The place of work data was considered more consistent with the legislation in terms of current information and the analysis of area industry structure.

For most SDA's, the data in the table is the percent of government to total wage and salary employment computed from MESC labor market area (LMA) wage and salary employment data. For SDA's which do not conform to LMA boundaries, the LMA data were disaggregated using county employment estimates based on employer reports under the unemployment insurance system (ES-202 report). Annual average 1986 wage and salary data were used for SDA's conforming to LMA boundaries. Annual average 1986 ES-202 data were used to disaggregate county employment for SDA's not conforming to labor market boundaries. Employment estimates by place of work are only available for SDA's comprising whole counties. It is recommended that sub-county SDA's use the information provided for their respective county.

Ratio of Private Employment to Population

This ratio is one of several criteria used to justify administrative costs in excess of the 30 percent limitation [Section 108, part 2, b(ii)]. The employment information is derived from the establishment survey data base described in the previous table. The population data is based on the 1980 Census of Population 16+ years of age.

VII. APPENDICES

A. Glossary . . . . . .

B. Unemployment Insurance Claimants . . . . . .

C. Per Capita Personal Income by County . . . . . .

D. 1995 Detailed Occupational Projections . . . . . .

APPENDIX A

GLOSSARY

GLOSSARY

LABOR MARKET AREAS consist of a central community and surrounding territory in which there is a concentration of economic activity or labor demand and in which workers can generally change jobs without changing their residence. Major labor market areas (MSA's) have a central city (or adjoining cities) with a population of 50,000 or more. Small labor market areas must have a central community that has a population nucleus of 5,000 or more.

METROPOLITAN STATISTICAL AREAS (MSA'S) are designated and defined by the U.S. Department of Commerce so that local economic and social statistics collected by many government and private organizations may be presented on a common geographic basis. Areas qualifying as metropolitan statistical areas have either a city with a population of at least 50,000 or a Bureau of the Census urbanized area of at least 50,000 and a total metropolitan statistical area population of at least 100,000.

CURRENT POPULATION SURVEY is conducted monthly in approximately 3,000 Michigan households by the U.S. Bureau of the Census to derive civilian labor force, total employment and unemployment estimates for the state. These estimates are prepared directly by BLS and released at the same time as the national figures each month. Labor force estimates for subareas of Michigan are compiled by the Bureau of Research and Statistics of MESC based on standard BLS procedures. These independently derived figures for labor market areas are then adjusted for additivity to the Statewide totals.

CIVILIAN LABOR FORCE (BY PLACE OF RESIDENCE) is the summation of the number of area residents who are estimated to be employed and the number of area residents estimated to be unemployed.

EMPLOYMENT, TOTAL includes an unduplicated estimate of area residents who earned wages during the week including the 12th of each month. This estimate includes agricultural employees, self-employed and unpaid family workers, domestics and strikers, as well as residents who were employed in wage and salary jobs within the labor market area or in another labor market area.

UNEMPLOYMENT, TOTAL is an unduplicated estimate of area residents who did not earn any wages during the survey week including the 12th of the month, and who were able, available, and actively seeking work during the thirty-day period preceding the survey week.

UNEMPLOYMENT RATE is the total number of unemployed in the labor market area divided by the civilian labor force in the area.

WAGE AND SALARY EMPLOYMENT (BY PLACE OF WORK) is an estimate of the number of individual jobs in the area based on a survey of employers during the survey week. These estimates are available by industry and include nonresidents who commute into the labor market area for work, as well as individuals who have more than one job in the same labor market area.

WORKERS INVOLVED IN LABOR DISPUTES is an estimate of the number of jobs that are affected by a labor-management dispute during the entire survey week. Workers included in this category are not considered unemployed since they have a job attachment.

BENCHMARK (CURRENT EMPLOYMENT STATISTICS) indicates the most recent time period during which the industry employment estimates, which are based on a monthly sample of local employers, were compared with and adjusted to the total count of area jobs as reported under the Michigan Employment Security Act. Also, estimates of noncovered employment are included.

BENCHMARK (CURRENT POPULATION SURVEY) indicates the most recent time period during which the labor force, employment and unemployment estimates, by place of residence, were compared with and adjusted to the national household survey conducted in Michigan by the U.S. Bureau of Labor Statistics.

HANDICAPPED The term "handicapped individual" means any individual who has a physical or mental disability which for such individual constitutes or results in a substantial handicap to employment.

OFFENDER The term "offender" means any adult or juvenile who is or has been subject to any stage of the criminal justice process and for whom services under employment and training legislation may be beneficial or who requires assistance in overcoming artificial barriers to employment resulting from a record of arrest or conviction.

ECONOMICALLY DISADVANTAGED PERSON The term "economically disadvantaged" means an individual who meets one of the following criteria:

A. Receives, or is a member of a family which receives cash welfare payments under a federal,state or local welfare program;

B. Has, or is a member of a family which has received a total income for the six (6) months prior to application which is not in excess of the most recently established poverty levels determined in accordance with criteria established by the Office of Management and Budget (OMB),or is 70% of the lower standard of living;

C. Receives food stamps pursuant to the Food Stamp Act of 1977;

D. Is a foster child, on behalf of whom state or local government payments are made;or

E. Is an adult, handicapped individual whose own income meets the requirements of (A) or (B) above, but who is a member of a family whose income does not meet such requirements.

POVERTY LEVEL INCOME is the maximum annual income which can be received by an individual or a family and still be considered economically disadvantaged. The maximum income level varies according to size of family. The poverty guidelines continue to be updated periodically to

reflect consumer price changes as measured by the Consumer Price Index. The current poverty guidelines effective February 20, 1987 are:

Family Size	Nationwide
1	$5,500
2	7,400
3	9,300
4	11,200
5	13,100
6	15,000
7	16,900
8	18,800

For families in excess of eight members, add $1,900 for each additional member.

SEVENTY PERCENT LOWER LIVING STANDARD INCOME LEVELS. Are effective as of July 29, 1987. Eligibility to participate in JTPA programs funded under Title II-A and Title II-b (Summer Youth Employment Program), require income determination of eligibility on the higher of either 70% of the lower living standard income level, or the OMB poverty guidelines. For JTPA purposes only metropolitan income levels will be used for Detroit MSA levels, per Michigan Department of Labor Instruction Letter 85-5.

Family Size	Detroit MSA	Metropolitan (except for the Detroit MSA)	Non-Metro
1	$4,390	$4,550	$4,380
2	7,190	7,460	7,170
3	9,870	10,240	9,850
4	12,190	12,640	12,160
5	14,380	14,920	14,350
6	16,820	17,440	16,780
Each Over Six	2,440	2,520	2,430

Note: Metropolitan area income standards are applied to applicants residing within a Metropolitan Statistical Area (MSA). Non-Metropolitan area income standards are applied to applicants outside an MSA. Metropolitan Statistical Areas are listed in the table on the following page.

METROPOLITAN STATISTICAL AREAS IN MICHIGAN

City	Counties
Ann Arbor	Washtenaw
Detroit	Lapeer-Livingston-Macomb Monroe-Oakland-St.Clair-Wayne
Battle Creek	Calhoun
Benton Harbor	Berrien
Flint	Genesee
Grand Rapids	Kent-Ottawa
Jackson	Jackson
Kalamazoo	Kalamazoo
Lansing/East Lansing	Clinton-Eaton-Ingham
Muskegon	Muskegon
Saginaw-Bay City-Midland	Saginaw-Bay-Midland

APPENDIX B

UI CLAIMANTS BY SDA

This information is prepared by the Michigan Employment Security Commission from the Unemployment Insurance Data base. This information represents U.I. claims for regular benefits for the survey week which includes the 12th of the month during September 1987. The claimant data has been geographically distributed by Service Delivery Area.

UNEMPLOYMENT INSURANCE CLAIMANTS BY SERVICE DELIVERY AREA
SEPTEMBER 1987*

AREA	REGULAR UNEMPLOYMENT INSURANCE
Barry-Branch-Calhoun	2404
Berrien-Cass-Van Buren	2272
Lansing Tri-County	4035
Thumb Area	2379
CAPC	2113
Region II	3247
Kalamazoo-St. Joseph	2436
Kent County	4169
Livingston-Washtenaw	1890
Macomb-St. Clair	9360
Saginaw-Midland-Bay	3206
Monroe County	1314
Oakland County	9295
Muskegon-Oceana	1970
Allegan-Ottawa	1386
Genesee-Shiawassee	8518
Wayne County(1)	24757
City of Detroit	13728
Region 7B	977
West Central Michigan	1033
Northeast Michigan	1177
Northwest Michigan	2151
Eastern Upper Peninsula	370
Central Upper Peninsula	1236
Western Upper Peninsula	600
State of Michigan	92295

*Source: Michigan Employment Security Commission
Bureau of Research and Statistics

(1)Wayne County total includes City of Detroit.

APPENDIX C

PER CAPITA PERSONAL INCOME BY COUNTY

The per capita personal income estimates presented in this publication were produced by the Bureau of Economic Analysis. Personal income and derivative measures have a broad range of application. They are widely used in both the public and private sectors. For state and local governments the estimates are useful inputs in economic resource profiles and in economic models developed for planning purposes.

Per capita personal income of an area is the income received by, or on behalf of all the residents of the area. Personal income is the sum of wage and salary disbursements, other labor income, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance.

PER CAPITA PERSONAL INCOME BY COUNTY
(Residency Adjusted)

Area	1980	1984
Michigan	9798	12621
Alcona	6397	8646
Alger	6577	8750
Allegan	7794	10519
Alpena	7735	9775
Antrim	7381	9421
Arenac	6675	8755
Baraga	6865	8302
Barry	7673	10347
Bay	8909	11271
Benzie	6805	9504
Berrien	8474	11149
Branch	8187	10389
Calhoun	9418	11729
Cass	7889	11476
Charlevoix	7756	9810
Cheboygan	7036	8558
Chippewa	6498	8216
Clare	6227	8228
Clinton	8691	11885
Crawford	6277	8242
Delta	7294	9352
Dickinson	8890	11381
Eaton	9528	12742
Emmet	8278	10719
Genesee	10171	13181
Gladwin	6479	8227
Gogebic	6894	8867
Grand Traverse	8929	12201
Gratiot	8122	10428
Hillsdale	7519	10296
Houghton	6391	8225
Huron	8096	11235
Ingham	9647	12277
Ionia	7807	9921
Iosco	7014	8927
Iron	7439	9999
Isabella	6575	8849
Jackson	8793	11166
Kalamazoo	9854	12817
Kalkaska	6435	8971
Kent	9405	12448
Keweenaw	6695	8137

(Continued)
PER CAPITA PERSONAL PERSONAL INCOME BY COUNTY

Area	1980	1984
Lake	5440	7109
Lapeer	8906	11516
Leelanau	8250	11601
Lenawee	8749	11369
Livingston	10067	13291
Luce	7493	10276
Mackinac	7202	9583
Macomb	10846	14498
Manistee	7464	9772
Marquette	7751	9645
Mason	6988	9142
Mecosta	5582	7254
Menominee	7219	9948
Midland	10052	13269
Missaukee	5979	7813
Monroe	8953	12226
Montcalm	7491	9607
Montmorency	6658	8457
Muskegon	8219	10498
Newaygo	6665	9054
Oakland	13648	17837
Oceana	6600	8662
Ogemaw	6034	7709
Ontonagon	6557	7309
Osceola	6163	8087
Oscoda	5515	7272
Otsego	7849	10070
Ottawa	8941	12208
Presque Isle	6379	8694
Roscommon	7060	9056
Saginaw	9269	11495
St. Clair	9207	12120
St. Joseph	8256	10745
Sanilac	7975	10071
Schoolcraft	6923	8921
Shiawassee	8764	11613
Tuscola	7801	10316
Van Buren	7401	9700
Washtenaw	11261	14670
Wayne	9993	12303
Wexford	6890	9008

Source: Bureau of Economic Analysis

APPENDIX D

1995 DETAILED OCCUPATIONAL PROJECTIONS

The following tables list detailed occupational projections for the period 1985 - 1995. Included are employment levels for both years, net and percentage change in employment and data on annual openings.

State of Michigan
OCCUPATIONAL EMPLOYMENT PROJECTIONS
1985 - 1995
(For Occupations of 50 Employment or Greater)

OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
TOTAL, ALL OCCUPATIONS	3,999,500	4,374,200	374,675	9.37	67,420	37,470	29,950
Managerial & mgt. rel. occupations	**345,350**	**398,750**	**53,400**	**15.46**	**17,850**	**5,340**	**12,510**
Managerial & admin. occupations	**240,600**	**275,600**	**34,975**	**14.54**	**12,480**	**3,500**	**8,980**
Educational Administrators	9,700	10,450	725	7.42	370	70	300
Food serv. & lodging manager	13,700	15,750	2,050	14.86	740	200	540
Postmasters & mail superint.	1,350	1,450	100	7.38	110	10	100
Pub. adm. exec., legist., admin.	2,200	2,400	225	9.92	140	20	120
AO managers & administrators	213,650	245,550	31,900	14.93	11,110	3,190	7,920
Management support occupations	**104,700**	**123,150**	**18,425**	**17.59**	**5,370**	**1,840**	**3,520**
Accountants & auditors	29,100	36,350	7,225	24.85	1,620	720	900
Assessors	800	850	75	9.98	30	10	30
Claims examiner prop. & cas. ins.	2,050	2,500	425	20.19	110	40	70
Compliance & enforcement insp.	3,650	3,850	175	4.48	130	20	120
Constuction & building inspectors	1,500	1,650	150	10.58	130	20	110
Cost estimators	6,700	7,450	750	11.39	260	80	180
Personnel specilists & related	12,850	14,550	1,675	12.95	510	170	340
Claims takers, unemp. benefits	450	400	-25	-10.42	10	0	10
Emp. interviewers, emp. serv.	1,700	2,350	625	35.93	110	60	50
Other personnel specialists	10,050	11,050	1,000	10.00	360	100	260
Special agents, insurance	700	750	100	13.12	30	10	20
Purchasing agents & buyers	12,100	13,300	1,175	9.78	550	120	430
Purch. agents ex. whl/ret/farm	6,800	7,350	575	8.39	270	60	210
Whlsle. & ret. buyers, ex. farm	5,300	5,950	625	11.56	280	60	220
Tax exam., coll., & reven. agent	1,150	1,100	0	-2.62	30	0	30
Tax preparers	1,250	1,400	150	12.14	60	20	50
Underwriters	2,600	2,950	375	14.35	50	40	20
AO management support worker	30,950	37,200	6,250	20.23	1,880	630	1,250
Engineers, architects, & surveyors	**85,700**	**72,100**	**8,400**	**9.74**	**2,410**	**840**	**1,770**
Engineers	**80,850**	**88,550**	**5,700**	**9.38**	**2,200**	**570**	**1,830**
Aeron. & astron. engineers	500	550	25	7.55	20	0	10
Chemical engineers	1,150	1,350	175	15.11	50	20	30
Civil engineers, incl. traffic	5,050	5,900	850	16.82	240	80	150
Electri. & electro. engineer	7,250	9,100	1,825	25.00	330	180	150
Industrial engineers, ex. safety	7,000	7,450	475	6.63	210	50	160
Mechanical engineers	10,900	11,650	775	7.00	360	80	280
Metallurg. & related engineers	1,800	1,950	150	7.94	80	10	60
Mining engineers, incl safety	50	50	0	1.24	0	0	0
Nuclear engineers	200	200	0	0.00	0	0	0
Petroleum engineers	200	200	0	1.48	0	0	0

State of Michigan
OCCUPATIONAL EMPLOYMENT PROJECTIONS
1985 - 1995
(For Occupations of 50 Employment or Greater)

OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
Other engineers	26,800	28,250	1,450	5.40	910	140	770
Safety engineers, except mining	600	650	50	7.90	20	0	10
All Other engineers	26,150	27,550	1,400	5.35	890	140	760
Architects & surveyors	**4,850**	**5,550**	**700**	**14.58**	**200**	**70**	**130**
Architects, including landscape	2,800	3,200	425	14.99	140	40	100
Surveyors	2,050	2,350	300	14.02	70	30	40
Natural, computer, & math scientists	**24,700**	**30,150**	**5,475**	**22.18**	**930**	**550**	**380**
Computer systems analysts, EDP	**12,550**	**17,300**	**4,725**	**37.55**	**580**	**470**	**110**
Life scientists	**4,150**	**4,550**	**400**	**9.49**	**130**	**40**	**90**
Agricultural & food scientists	650	700	75	11.33	20	10	10
Biological scientists	1,800	1,950	200	10.66	50	20	30
Foresters & conserv. scientists	600	600	25	3.22	20	0	10
Medical scientists	350	450	50	14.42	20	10	10
All Other life scientists	800	850	50	7.73	20	10	20
Mathematical scientists	**2,200**	**2,300**	**100**	**5.08**	**70**	**10**	**60**
Actuaries	150	250	75	44.94	10	10	0
Statisticians	1,900	1,900	0	-0.19	50	0	50
Mathematicians	150	200	50	31.67	10	0	0
Physical scientists	**5,750**	**5,950**	**250**	**4.26**	**160**	**20**	**130**
Chemists	3,500	3,550	75	2.22	80	10	70
Geolog., geoph., & oceanograph.	450	500	75	17.80	20	10	20
Meteorologists	150	150	0	2.00	0	0	0
Physicists & astronomers	250	200	0	-1.81	0	0	0
All Other physical scientists	1,400	1,500	100	6.47	50	10	40
Social scientists	**5,850**	**6,500**	**675**	**11.73**	**160**	**70**	**90**
Economists	**600**	**700**	**100**	**16.68**	**20**	**10**	**10**
Psychologists	**2,850**	**3,300**	**475**	**16.38**	**90**	**50**	**40**
Sociologists	**150**	**150**	**0**	**0.84**	**0**	**0**	**0**
Urban & regional planners	**350**	**350**	**25**	**5.31**	**10**	**0**	**0**
All Other social scientists	**1,900**	**2,000**	**100**	**5.26**	**50**	**10**	**40**
Social, rec., & relig. workers	**34,050**	**38,650**	**4,600**	**13.50**	**2,030**	**460**	**1,570**
Clergy	**13,500**	**13,700**	**200**	**1.51**	**940**	**20**	**920**
Directors, relig. activ. & educ.	**1,800**	**1,800**	**50**	**2.53**	**110**	**0**	**110**
Recreation workers	**4,050**	**4,750**	**650**	**16.30**	**250**	**70**	**180**
Social workers	**14,900**	**18,600**	**3,700**	**24.74**	**720**	**370**	**380**

State of Michigan
OCCUPATIONAL EMPLOYMENT PROJECTIONS
1985 - 1995
(For Occupations of 50 Employment or Greater)

OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
Lawyers & judges	19,000	24,700	5,700	30.00	1,610	570	1,040
Judges, magis., & other judic. wkrs	1,050	1,200	150	14.86	100	20	90
Lawyers	17,950	23,500	5,550	30.89	1,510	550	950
Teachers, librarians, & counselors	184,300	198,850	14,525	7.88	8,290	1,450	6,840
Teachers, preschool & elementary	46,700	55,800	9,100	19.49	2,530	910	1,620
Teachers, preschool & kindergarten	8,150	10,600	2,475	30.30	470	250	230
Teachers, elementary	38,550	45,200	6,625	17.21	2,060	660	1,390
Teachers, secondary school	44,400	45,150	775	1.73	1,620	80	1,550
College & university faculty	21,450	20,400	-1,050	-5.00	480	-100	590
Other teachers & instructors	62,850	67,600	4,775	7.59	3,190	480	2,710
Farm & home management advisors	550	500	-25	-10.17	20	0	20
Graduate assistants, teaching	3,500	3,250	-225	-7.14	80	-20	110
Instructors, adult nonvoc. educ.	5,900	7,300	1,425	24.17	420	140	280
Instructors & coaches, sport	6,000	6,650	625	10.57	330	60	270
Teachers & instruc., voc. educ	6,900	8,100	1,200	17.52	440	120	320
All Other teachers & instructors	40,000	41,800	1,800	4.53	1,890	180	1,710
Librarians, archivists, curators	5,450	5,800	350	6.26	330	30	300
Audio-visual specialists	350	350	25	5.66	20	0	20
Curators, archiv., museum tech.	350	400	25	5.92	40	0	40
Librarians, professional	4,750	5,050	300	6.33	270	30	240
Counselors	3,450	4,050	625	17.99	140	80	80
Health diagn. & treat. occupations	103,050	127,500	24,425	23.69	6,010	2,440	3,570
Chiropractors	950	1,050	75	8.43	100	10	90
Dentists	7,100	8,150	1,000	14.17	510	100	410
Dietitians & nutritionists	1,450	1,700	250	17.84	80	30	50
Opticians, dispensing & measuring	2,200	2,700	525	23.83	130	50	70
Optometrists	1,300	1,600	325	25.02	140	30	110
Pharmacists	6,300	6,800	450	7.28	310	50	260
Podiatrists	1,000	1,150	175	16.93	80	20	50
Physician assistants	2,450	2,950	500	20.80	70	50	20
Physicians & surgeons	18,400	20,850	2,425	13.21	1,310	240	1,060
Registered nurses	52,800	69,700	16,900	32.02	2,980	1,690	1,290
Therapists	7,850	9,250	1,400	17.88	220	140	80
Occupational therapists	800	1,050	275	32.88	40	30	10
Physical therapists	1,600	2,100	475	30.23	70	50	30
Recreational therapists	450	550	75	17.45	20	10	10
Respiratory therapists	2,300	2,700	400	16.86	50	40	10
Speech pathologists & audiolog.	1,850	2,000	125	6.23	20	10	10

State of Michigan
OCCUPATIONAL EMPLOYMENT PROJECTIONS
1985 - 1995
(For Occupations of 50 Employment or Greater)

OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
All Other therapists	800	850	75	8.17	20	10	10
Veterinarians & vet. inspector	1,250	1,600	350	28.01	100	40	70
Writers, art., enter., & athletes	44,100	51,100	7,025	15.94	2,120	700	1,420
Artists & commercial artists	7,200	9,100	1,900	26.48	380	190	190
Athletes, coaches, umps., & rel.	3,800	3,800	0	-0.40	50	0	50
Dancers & choreographers	50	50	0	19.28	0	0	0
Designers, ex. interior design	10,350	12,200	1,800	17.47	530	180	350
Merch. displayers & window dresser	800	850	75	8.69	30	10	30
Musicians	6,500	7,300	775	11.82	380	80	280
Music dir., singers, & rel.	1,650	1,700	75	4.40	80	10	70
Musicians, instrumental	4,900	5,550	700	14.31	280	70	210
Photographers & camera operators	3,400	4,050	675	20.04	210	70	140
Camera operators, TV & movie	250	350	100	38.56	20	10	10
Photographers	3,150	3,750	575	18.65	190	60	130
Prod., direct., actors, & related	600	800	200	38.40	30	20	10
P.R. specialists & pub. writer	2,250	2,750	500	22.73	130	50	80
Radio & TV announcers & newscasters	1,500	1,650	175	12.14	40	20	20
Announcers, radio & TV	1,300	1,450	150	11.77	30	20	10
Broadcast news analysts	150	200	25	15.20	10	0	10
Reporters & correspondents	2,350	2,500	150	6.99	90	20	70
Writers & edit., in. tech. writers	5,350	6,100	750	13.82	280	70	210
Technician occupations	151,150	177,050	25,950	17.16	5,410	2,590	2,810
Health technic. & technolog.	62,850	72,050	9,225	14.66	2,090	920	1,170
Dental hygienists	4,300	5,200	925	21.85	120	90	20
Dietetic technicians	1,650	2,000	325	19.68	90	30	60
EKG technic. & technolog.	700	800	100	16.20	20	10	10
EEG technic. & technolog.	250	300	25	14.90	10	0	0
Emergency medical technician	2,100	2,550	450	22.24	80	50	40
Licensed practical nurses	26,750	29,700	2,975	11.10	950	300	660
Med. & clin. lab tech. & technog.	9,300	9,850	575	6.13	170	60	120
Med. & clin. lab technicians	3,400	3,550	150	4.64	60	20	40
Med. & clin. lab technologists	5,900	6,300	400	7.00	120	40	70
Medical records techn. & technog.	1,400	1,850	450	31.81	70	50	20
Radiologic techn. & technolog.	5,150	6,050	900	17.39	140	90	50
Surgical technicians	1,250	1,400	175	14.67	40	20	20

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AO health prof. & paraprofess.	10,050	12,300	2,275	22.64	400	230	170
Engineering & science technicians	**60,900**	**68,750**	**5,850**	**9.60**	**1,820**	**580**	**1,240**
Engineering technicians	31,450	36,000	4,575	14.56	1,180	460	720
Civil engineering technicians	2,550	2,800	250	9.99	90	30	60
Electri. & electro. technicians	7,350	9,950	2,600	35.50	370	260	110
Industrial engineering tech.	950	1,000	25	2.60	30	0	30
Mechanical engineering tech.	2,500	2,850	350	14.53	100	40	70
All Other engineering techs.	18,100	19,450	1,325	7.36	590	130	450
Drafters	21,600	21,600	25	0.11	430	0	430
Phys. & life sci. technician	7,900	9,150	1,250	15.77	210	120	90
Petroleum techn. & technol.	50	50	0	23.25	0	0	0
All Other science technicians	7,850	9,100	1,225	15.72	210	120	80
Technicians, ex. health & engin.	**27,400**	**38,250**	**10,875**	**39.73**	**1,490**	**1,090**	**410**
Air traffic controllers	450	500	50	10.83	20	0	10
Broadcast technicians	500	650	125	26.05	20	10	10
Computer programmers	18,250	27,450	9,175	50.20	1,020	920	100
Legal assistants & technicians	4,300	5,500	1,200	27.78	280	120	160
Law clerks	1,500	2,050	550	36.31	140	50	80
Paralegal personnel	1,100	1,500	400	37.33	70	40	30
Title exam. & other legal assts.	1,750	2,000	250	14.46	70	30	40
Programmers, numerical cntrl tool	400	450	50	14.06	10	10	0
Radio operators	150	200	25	11.66	10	0	0
Technical assistants, library	1,650	1,750	100	6.44	100	10	80
All Other technicians	1,650	1,800	150	9.00	50	10	40
AO prof., paraprof., & techn. wkrs.	**21,250**	**23,800**	**2,525**	**11.90**	**570**	**250**	**320**
Marketing & sales occupations	**418,350**	**487,300**	**68,925**	**16.48**	**23,300**	**6,890**	**16,410**
Cashiers	72,000	88,350	16,350	22.70	3,020	1,630	1,390
Counter & rental clerks	6,200	7,000	800	13.07	480	80	400
Insurance sales workers	16,800	18,100	1,300	7.81	820	130	690
Real estate agents & brokers	20,750	25,850	4,875	23.52	1,860	490	1,370
Brokers, real estate	1,650	2,050	375	23.38	150	40	110
Sales agents, real estate	19,100	23,600	4,500	23.53	1,710	450	1,260
Real estate appraisers	850	1,100	225	27.03	80	20	60
Salespersons, retail	128,000	144,700	16,675	13.04	7,380	1,670	5,710
Securities & fin. serv. sales	5,950	9,000	3,075	51.71	680	310	370
Stock clerks, sales floor	34,300	36,700	2,400	7.03	1,640	240	1,390
Travel agents	2,800	3,750	950	34.54	220	100	130

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All Other sales & related workers	**130,750**	**153,000**	**22,225**	**17.00**	**7,120**	**2,220**	**4,890**
Admin. support occup., in. clerical	**835,400**	**879,050**	**43,650**	**5.87**	**21,080**	**4,360**	**16,710**
Adjusters & investigators	**22,650**	**26,300**	**3,625**	**15.97**	**880**	**360**	**520**
Adjustment clerks	3,350	3,850	500	14.66	120	50	70
Bill & account collectors	3,150	4,050	875	27.67	180	90	90
Ins. adj., exam., & investigators	2,400	2,850	450	18.58	80	40	40
Ins. appraisers, auto damage	200	250	25	11.56	10	0	0
Insurance claims clerks	3,300	3,700	375	11.47	90	40	50
Insurance examining clerks	350	450	50	15.00	10	10	10
Ins. policy processing clerk	4,400	5,050	650	14.56	180	60	120
License clerks	150	200	25	9.13	10	0	0
Welfare elig. wkrs. & interviewer	5,300	6,000	700	13.06	220	70	150
Communications equip. operator	**10,450**	**11,350**	**925**	**8.95**	**350**	**90**	**260**
Telephone operators	9,900	10,900	1,025	10.28	350	100	250
Central office operators	300	300	0	0.00	10	0	10
Directory assist. operator	950	950	0	0.00	20	0	20
Switchboard operators	8,700	9,700	1,025	11.73	320	100	220
Telegraph & teletype operators	100	100	0	-15.95	0	0	0
All communications equip. oper	400	350	-50	-15.86	0	0	0
Computer op. & peripheral eq. ops.	**9,800**	**12,550**	**2,750**	**28.10**	**380**	**280**	**100**
Computer op., ex. periph. eqpt.	8,800	11,300	2,500	28.48	340	250	90
Peripheral EDP equip. operators	1,000	1,250	250	24.76	40	20	20
Dupl., mail, & other off. eqpt. op.	**4,450**	**4,750**	**300**	**6.95**	**120**	**30**	**90**
Duplicating machine operator	950	1,000	25	2.37	30	0	20
Transit clerks	450	550	100	21.31	20	10	10
All Other office machine oper	3,050	3,200	200	6.28	70	20	60
Fin. records proc. occupations	**75,850**	**80,700**	**4,875**	**6.43**	**3,230**	**490**	**2,740**
Billing, cost, & rate clerks	10,250	11,300	1,075	10.57	360	110	250
Bill., post., & calc. mach. clerk	2,600	2,950	375	14.28	80	40	40
Bookkeep., acct., & aud. clerk	56,400	60,400	4,000	7.09	2,660	400	2,260
Payroll & timekeeping clerks	6,600	6,050	-550	-8.73	120	-50	180
Information clerks	**29,600**	**34,500**	**4,875**	**16.48**	**1,350**	**490**	**860**
Hotel desk clerks	2,450	3,050	575	23.22	170	60	110
New accounts clerks	1,900	2,450	550	28.68	120	50	70
Receptionists & info. clerks	23,400	26,250	2,900	12.39	920	290	630

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Res & ticket agt. & travel clerk	1,900	2,750	875	46.15	130	90	50
Reserv. & trans. ticket agent	1,650	2,400	775	47.98	120	80	40
Travel clerks	250	350	100	34.90	20	10	10
Mail & message distrib. worker	**18,800**	**20,800**	**2,000**	**10.64**	**800**	**200**	**600**
Mail clerks, ex. mail mach.	2,700	2,800	125	4.55	110	10	90
Messengers	1,300	1,550	225	17.26	100	20	70
Postal mail carriers	10,750	12,300	1,575	14.64	480	160	320
Postal service clerks	4,050	4,150	75	1.96	120	10	120
Mat. rec., sched., disp., & rel.	**78,350**	**78,150**	**-150**	**-0.24**	**2,180**	**-10**	**2,170**
Dispatchers	5,150	5,750	600	11.81	190	60	130
Dispatch., ex. pol., fire,ambul	3,700	4,150	450	12.26	140	50	100
Dispatch., police, fire, ambul.	1,450	1,600	150	10.64	50	20	40
Meter readers, utilities	1,550	1,450	-100	-8.54	10	0	20
Order fillers, whsle & ret. sales	4,950	4,700	-200	-4.50	110	-10	130
Procurement clerks	1,350	1,350	50	3.54	40	0	40
Prod., plan., & exped. clerk	8,900	8,150	-700	-8.25	160	-60	230
Stock clerks, storeroom/whse.	23,900	22,050	-1,825	-7.69	440	-170	630
Traffic, ship., & rec. clerk	24,350	25,550	1,225	5.02	810	120	690
Transportation agents	350	550	200	62.81	30	20	10
Weighers, meas., check., & rel.	3,250	3,000	-200	-7.19	100	-10	120
All Other mat. rec., sched.	4,700	5,550	900	19.08	260	90	170
Records proc. occup., ex. financial	**27,050**	**29,800**	**2,750**	**10.14**	**870**	**270**	**600**
Advertising clerks	400	400	25	7.97	10	0	10
Brokerage clerks	550	700	150	27.49	30	20	20
File clerks	8,050	8,250	225	2.91	190	20	160
Library assistants	4,950	5,300	350	6.87	150	30	120
Order clerks, mat., merch. & serv.	9,050	10,450	1,400	15.41	350	140	210
Personnel clerks, ex. payroll	3,100	3,500	375	12.14	90	40	50
Statement clerks	950	1,200	225	22.11	50	20	30
Secretaries, stenog. & typists	**140,450**	**143,900**	**3,425**	**2.45**	**3,490**	**340**	**3,150**
Secretaries	106,250	111,650	5,400	5.07	3,000	540	2,460
Stenographers	6,200	3,600	-2,550	-41.82	-110	-250	140
Typists	28,050	28,650	625	2.25	610	60	550
Other clerical & admin. sup. w	**217,950**	**236,250**	**18,275**	**8.39**	**7,450**	**1,830**	**5,620**
Court clerks	1,100	1,250	175	16.37	50	20	30
Credit authorizers	650	800	150	22.12	30	10	20
Credit checkers	1,350	1,700	350	25.99	60	30	30
Customer serv. representative	3,700	3,500	-175	-5.64	60	-10	80
Data entry keyers, ex. composing	13,000	11,500	-1,475	-11.57	-50	-140	100
Data keyers, composing	650	850	200	32.07	30	20	10
General office clerks	90,050	95,550	5,500	6.11	3,390	550	2,840
Loan & credit clerks	2,800	3,500	700	25.21	150	70	80
Municipal clerks	800	900	75	9.60	30	10	20
Proofreaders & copy markers	550	650	125	21.15	40	10	30

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Real estate clerks	750	950	225	30.69	50	20	30
Statistical clerks	3,300	2,550	-700	-22.23	0	-60	80
Teacher aides & educ. assts.	20,150	23,950	3,775	18.79	870	380	490
Tellers	25,350	26,000	650	2.55	360	60	300
All Other clerical & adm. support	53,750	62,550	8,800	16.36	2,390	880	1,510
Service occupations	**647,250**	**734,650**	**87,375**	**13.50**	**35,910**	**8,740**	**27,170**
Clean. & bldg. serv. ex. priv.hshld	**92,400**	**99,450**	**7,050**	**7.62**	**5,800**	**700**	**5,090**
Janitors & cleaners, incl. maids	91,850	98,850	7,050	7.66	5,790	700	5,080
Pest controllers & assistant	600	600	0	0.00	10	0	10
Food & bev. prep. & serv. occup.	**245,050**	**289,500**	**44,450**	**18.14**	**10,200**	**4,440**	**5,750**
Bakers, bread & pastry	4,500	5,350	850	19.15	230	90	140
Bartenders	13,450	15,550	2,075	15.35	690	210	480
Cooks, ex. short order	30,100	35,400	5,300	17.61	1,490	530	960
Cooks, instit. or cafeteria	11,350	13,250	1,900	16.70	550	190	360
Cooks, restaurant	18,750	22,150	3,400	18.16	940	340	600
Cooks, sh. ord. & sp. fast food	21,850	26,050	4,200	19.21	800	420	380
Din. rm. & cafeteria attendants	17,250	20,400	3,175	18.39	570	320	250
Food prep. & ser. wk., fast food	30,000	35,800	5,775	19.26	1,290	580	720
Food preparation workers	29,650	35,000	5,350	18.01	1,520	530	990
Hosts & hostesses, rest./lounge	5,950	7,150	1,200	20.00	310	120	190
Waiters & waitresses	65,300	77,600	12,325	18.88	2,120	1,230	890
All Other food service workers	27,000	31,200	4,200	15.57	1,180	420	760
Health service & rel. occupations	**68,750**	**82,250**	**13,500**	**19.64**	**3,210**	**1,350**	**1,860**
Ambulance drivers & attendants	100	150	25	28.77	10	0	0
Dental assistants	6,400	7,800	1,400	21.80	190	140	50
Medical assistants	6,500	8,850	2,350	36.02	390	230	160
Nursing aides & psych aides	50,800	59,900	9,075	17.88	2,450	910	1,540
Nursing aides & orderlies	50,100	59,150	9,050	18.04	2,430	900	1,520
Psychiatric aides	700	750	50	6.24	20	0	20
Occupational therapy assistants	200	200	0	1.39	0	0	0
Pharmacy assistants	3,750	4,250	500	13.36	130	50	80
Phys. & correct. therapy assisst.	1,050	1,200	150	15.14	40	20	20
Personal service occupations	**48,350**	**55,250**	**5,925**	**12.02**	**2,330**	**590**	**1,730**
Amusement & recreation attendants	4,450	4,900	475	10.61	180	50	140
Baggage porters & bellhops	900	1,200	275	31.28	70	30	40
Barbers	2,950	2,450	-475	-17.01	170	-40	220
Child care workers	11,850	13,200	1,375	11.50	510	140	370

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Cosmetologists & rel worker	18,600	19,450	875	4.65	660	90	570
Hairdress., hairsty., cosmetol.	17,850	18,700	850	4.69	630	80	550
Manicurists	600	600	25	2.60	20	0	20
Shampooers	150	150	0	8.59	10	0	0
Flight attendants	850	1,550	675	76.36	90	70	20
Guides	400	400	25	4.09	10	0	10
Social welfare service aides	7,850	10,500	2,675	34.33	620	270	350
Ushers	1,450	1,550	75	5.41	20	10	10
Private household workers	**81,950**	**79,700**	**-2,250**	**-2.78**	**7,710**	**-220**	**7,930**
Cooks, private household	950	900	0	-2.78	230	0	240
Housekeepers & butlers	1,650	1,850	200	11.88	230	20	210
Child care workers, pvt. hshhld.	15,800	16,350	525	3.35	590	50	540
Cleaners & serv., pvt. hshld.	22,600	20,750	-1,825	-8.15	2,970	-170	3,160
Protective service occupations	**69,500**	**79,500**	**10,000**	**14.41**	**3,580**	**1,000**	**2,570**
Correction officers & jailers	3,700	4,650	950	25.62	150	90	60
Fire fighting occupations	9,250	10,450	1,200	13.06	270	120	150
Fire fighters	7,500	8,450	950	12.78	170	100	70
Fire fighting & prevent supers.	1,400	1,600	225	15.27	90	20	70
Fire inspectors	350	400	25	10.40	10	0	10
Police & detectives	18,400	20,400	2,025	11.01	350	200	140
Police & detective superv.	2,450	2,700	250	9.81	60	20	40
Police detectives & investig.	1,400	1,550	125	9.62	20	10	10
Police patrol officers	14,500	16,150	1,650	11.35	260	160	100
Sheriffs & other law enforcement	2,300	2,400	125	5.02	80	10	70
Bailiffs	300	350	25	9.88	10	0	10
Fish & game wardens	250	250	0	5.47	10	0	10
Parking enforcement officers	150	150	25	23.57	10	0	0
Sheriffs, dep. sh., & US marsh.	1,600	1,650	50	2.44	50	0	50
Other protective service workers	35,850	41,550	5,700	15.94	2,730	570	2,160
Crossing guards	1,400	1,500	75	5.80	200	10	190
Detect. & invest., ex. public	1,350	1,400	50	3.21	90	0	80
Guards	27,050	32,050	5,050	18.65	2,320	500	1,810
All protective service workers	6,050	6,600	550	9.05	130	50	70
All Other service occupations	**40,200**	**48,950**	**8,725**	**21.68**	**3,090**	**870**	**2,220**
Housekeepers, institutional	3,900	4,900	975	24.66	300	100	200

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All Other service workers	36,300	44,050	7,750	21.36	2,800	780	2,020
Ag., forest., fish., & rel. occup.	117,600	112,600	-5,000	-4.28	8,420	-490	8,930
Superv., farm., for., & ag. related	1,350	1,450	50	4.22	50	10	50
Agriculture related occupations	26,950	30,850	3,850	14.31	1,320	390	940
Animal caretakers, ex. farm	1,800	2,200	400	21.71	80	40	40
Gardeners & groundskeepers	24,500	27,850	3,375	13.76	1,210	340	870
Graders & sorters, ag. products	650	750	100	14.53	40	10	30
Farm occupations	23,800	21,650	-2,100	-8.97	350	-200	580
Farm workers	22,850	20,550	-2,250	-10.00	310	-220	530
Nursery workers	950	1,100	150	15.22	40	10	30
Farm operators & managers	80,800	53,500	-7,275	-12.01	4,520	-720	5,250
Fishers, hunters, & trappers	300	300	0	1.50	10	0	10
Fishers, hunters, & trappers	250	250	0	2.05	10	0	10
Forestry & logging occupations	3,050	3,300	250	7.97	110	20	80
Fallers & buckers	1,400	1,500	100	7.77	50	10	40
Forest & conservation worker	550	500	-25	-6.73	10	0	20
Logging tractor operators	550	700	125	24.29	20	10	10
Log graders & scalers	50	50	0	3.08	0	0	0
Log handling equip. operator	300	300	25	6.38	10	0	10
All Other timber cutting & logging	150	150	25	9.87	10	0	0
All Other agric., forestry, fishing	1,350	1,600	250	17.65	60	20	40
Blue collar worker supervisors	67,250	65,750	-1,450	-2.21	1,740	-140	1,890
Construction trades	99,700	109,700	10,000	10.04	3,750	1,000	2,750
Air hammer operators	250	300	25	8.92	10	0	10
Bricklayers & stone masons	4,300	5,050	800	18.87	200	80	120
Brick masons	4,050	4,800	725	18.11	190	70	110
Stone masons	200	250	50	29.54	10	10	10
Carpenters	22,100	25,750	3,650	16.51	1,080	370	720
Carpet installers	900	1,000	125	15.34	30	10	10
Ceil. tile inst. & acoustic. carpen.	400	500	100	26.20	20	10	10
Concrete & terrazzo finishers	3,200	3,700	500	15.70	150	50	100
Drywall installers & finishers	1,900	2,400	475	24.78	60	50	10
Drywall installers	1,150	1,450	275	24.95	40	30	10
Tapers	600	750	150	25.64	20	20	0
Lathers	150	200	25	20.27	0	0	0
Electricians	21,850	23,100	1,275	5.83	870	130	540
Fence erectors	450	550	50	12.34	20	10	20
Glaziers	1,100	1,300	200	18.42	40	20	20
Hard tile setters	800	950	175	22.34	40	20	20
Highway maintenance workers	3,950	4,050	75	1.89	150	10	140
Insulation workers	1,550	1,950	375	25.08	80	40	20
Painters & paperhangers, const.	8,650	9,150	500	5.85	330	50	280

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OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
Pipelayers	650	750	125	18.73	40	10	20
Pipelaying fitters	50	50	0	23.46	0	0	0
Plasterers	250	350	50	19.33	20	10	10
Plumbers, pipefitters, & steamfitter	15,100	15,500	400	2.66	440	40	400
Rail maintenance crafts	1,100	800	-225	-24.13	10	-20	30
Roofers	4,500	5,300	800	17.80	150	80	70
Sep. tank serv. & sewer pipe clean.	250	250	25	7.28	10	0	10
Structural & reinfor. metal wkr.	1,850	2,150	325	17.32	70	30	30
Reinforcing metal workers	600	700	100	15.00	20	10	10
Structural metal workers	1,250	1,450	225	18.45	50	20	20
All Other constuction trades workers	4,800	4,800	200	4.15	170	20	150
Extractive & rel. wk., in. blasters	3,850	4,050	200	5.38	100	20	80
Blasters & explosives workers	100	100	0	8.20	0	0	0
Derrick operators, oil & gas	100	100	0	-12.88	0	0	0
Rotary drill op., oil & gas	200	200	0	-12.57	0	0	0
Roustabouts	700	600	-75	-14.01	0	0	10
Service unit operators	400	350	-25	-10.90	0	0	10
AO extractive workers, ex. helpers	2,300	2,700	375	16.42	100	40	60
Mechanics, installers, & repairs	170,450	185,550	15,100	8.86	5,900	1,510	4,390
Comm. equip. mech., inst., & rep.	2,250	1,900	-300	-14.90	30	-20	70
Central off. & PBX inst. & rep.	1,000	900	-75	-10.97	20	0	30
Frame wirers, central office	400	250	-100	-33.01	0	0	10
Radio mechanics	450	400	-25	-8.37	10	0	10
Signal or track switch maint.	300	200	-50	-24.21	0	0	10
AO communication equip. mechcanics	100	100	25	24.68	0	0	0
Electric & electronic craft wrkrs.	14,100	13,700	-375	-2.82	220	-30	280
Data process. equip. repairers	1,100	1,500	425	39.78	50	40	10
Elect. installers & repairer	600	700	100	16.14	20	10	10
Electrical powerline installers	3,100	2,350	-725	-24.19	-10	-70	60
Elec. motor & transf. repair	950	1,150	200	22.86	40	20	20
Elec. home enter. eq. repair	1,500	1,800	300	19.92	80	30	50
Electron. repair commer./ind eqpt.	750	950	225	29.38	50	20	30
Station installers & repairers	3,200	2,150	-1,025	-32.90	-40	-100	50
Tel. & cable TV line in. & rep.	2,950	3,100	150	5.46	40	20	30
Mach. & rel. mech., inst., & rep.	59,700	62,550	2,850	4.76	1,980	280	1,700
Industrial machinery mechanics	15,550	15,550	0	-0.12	410	0	420
Marine mechanic	150	150	0	-4.98	0	0	0
Sewing machine mechanic	300	250	-25	-13.68	0	0	10
Mach. maint. mech., tex m	50	50	0	-10.73	0	0	0
Water & plant plant mechanic	1,750	1,800	25	1.80	50	0	50
All Other mach. maint. mechanics	13,350	13,350	0	0.00	360	0	360
Machinery maintenance worker	3,400	3,150	-225	-7.28	130	-10	150
Maint. repairers, gen. utility	31,950	35,750	3,800	11.92	1,290	380	910
Millwrights	8,800	8,100	-675	-7.94	160	-60	230

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Vehicle & mobile eq. mech. & rep.	**54,800**	**64,750**	**9,925**	**18.09**	**2,170**	**990**	**1,180**
Aircraft mech. & engine special.	1,250	1,850	575	46.95	80	60	20
Auto. body & rel. repairers	12,000	14,450	2,475	20.57	490	250	250
Auto. & motorcycle mechanics	27,000	32,150	5,125	18.94	1,090	510	570
Bus & truck mech. & dies. special.	9,500	10,850	1,350	14.16	340	130	210
Farm equipment mechanics	1,450	1,500	100	6.62	40	10	30
Mobile heavy equip. mechanic	1,200	1,350	125	10.76	40	10	30
Rail car repairers	500	400	-100	-24.33	0	0	10
Small engine specialists	1,900	2,200	300	15.79	90	30	60
Other mech., inst., & repairers	**39,600**	**42,650**	**3,075**	**7.77**	**1,490**	**310**	**1,180**
Bicycle repairers	500	500	0	0.99	10	0	10
Coin & vend. mach. serv. & rep	850	900	100	10.97	30	10	20
Elect. meter inst. & rep.	1,150	1,100	-25	-5.30	30	0	40
Electromed. & biomed. eq. rep.	300	300	25	10.47	10	0	10
Heat., A/C & refrig. mech. & rep.	6,050	7,050	1,000	16.72	260	100	160
Home appl. & power tool rep.	2,400	2,650	275	11.25	130	30	100
Locksmiths & safe repairers	550	550	0	0.00	40	0	40
Mech. control & valve inst./rep.	200	200	0	4.78	10	0	10
Menders, garments & linens	300	300	0	-9.59	0	0	10
Mobile home repairers	50	50	0	8.01	0	0	0
Musical instru. rep. & tuner	200	200	0	3.02	10	0	10
Off. mach. & cash reg. servicer	950	1,200	225	23.16	60	20	40
Precision instrument repairer	1,950	1,950	0	-0.42	120	0	120
Riggers	1,200	1,150	0	-2.61	30	0	30
Tire repairers & changers	2,200	2,450	275	12.94	60	30	30
Watchmakers	250	300	50	17.67	20	0	20
All Other mech., install., & rep.	20,450	21,650	1,225	6.00	640	120	520
Precision production occupations	**137,950**	**138,050**	**75**	**0.05**	**4,930**	**10**	**4,930**
Precision food workers	**8,950**	**8,050**	**-825**	**-9.58**	**230**	**-80**	**320**
Bakers, manufacturing	450	300	-100	-26.03	0	0	10
Butchers & meatcutters	7,750	7,150	-575	-7.81	230	-50	290
Food batchmakers	450	400	-50	-14.96	10	0	10
All precision food & tobacco worker	300	200	-50	-24.93	0	0	10
Precision metal workers	**85,800**	**84,950**	**-800**	**-1.26**	**2,200**	**-70**	**2,280**
Boilermakers	850	900	75	8.95	30	10	20
Etchers & engrav., hand or mach.	250	250	25	7.87	10	0	10
Hand workers, jewelry & rel.	100	100	0	7.12	0	0	0
Instrument makers, precision	600	700	100	15.88	30	10	20
Jewelers & silversmiths	1,000	1,250	250	26.17	80	30	60
Layout workers, metal	650	550	-50	-11.21	20	0	30
Machinists	22,800	22,900	75	0.37	750	10	740
Pattern & model makers, metal	600	400	-150	-30.30	0	-10	20
Sheet metal workers	9,150	9,550	425	4.73	250	40	210
Tool & die makers	24,550	23,300	-1,200	-5.03	760	-110	880

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All Other precision metal workers	5,350	5,000	-300	-5.95	260	-20	290
Precision printing workers	**3,050**	**3,350**	**300**	**10.26**	**110**	**30**	**80**
Bookbinders	300	350	25	11.89	20	0	10
Compositors, typeset., & arrange.	900	900	0	-0.42	20	0	20
Lithog. & photoengr. workers	1,300	1,500	200	15.45	60	20	40
All Other precision printing work	550	600	75	14.61	20	10	10
Precision textile ,apparel & furn.	**6,450**	**7,200**	**750**	**11.63**	**530**	**80**	**450**
Custom tailors & sewers	2,950	3,200	250	8.10	290	20	260
Patternmakers & layout workers	200	150	0	-2.87	0	0	0
Shoe & leather wkrs. & rep.	200	150	-25	-29.02	10	0	20
Upholsterers	2,050	2,700	625	30.22	180	60	110
All Other prec. tex., app., & fur	1,100	1,050	-25	-4.90	50	0	60
Precision woodworkers	**7,350**	**8,000**	**675**	**9.32**	**400**	**70**	**330**
Cabinetmakers & ben. carpenter	2,050	2,450	425	21.48	160	40	110
Furniture finishers	850	900	75	7.63	40	10	30
Pattern & model makers, wood	2,800	2,850	50	1.84	110	10	100
Wood machinists	1,100	1,200	75	7.36	70	10	60
All Other precision woodworkers	550	600	50	8.81	40	0	30
Inspectors & rel. occupations	**37,750**	**37,150**	**-600**	**-1.63**	**1,130**	**-50**	**1,190**
Insp. ,test & graders ,precision	10,050	10,200	150	1.51	960	20	350
Other insp., test., graders	27,700	26,950	-750	-2.76	770	-70	840
Other precision workers	**8,650**	**9,300**	**625**	**7.23**	**340**	**60**	**270**
Dental lab technicians	1,600	1,850	250	15.19	60	20	40
Detail design, decor. , painters	250	250	25	13.07	10	0	0
Foundry mold & core makers	1,300	900	-350	-29.29	0	-30	30
Molders & shapers, ex. jewel	100	150	0	2.96	0	0	0
Patternmakers, model mak.,precis.	500	650	125	26.45	30	10	20
Photog. proc. wkrs., precision	250	300	75	28.23	10	10	0
All Other precision workers	4,650	5,150	525	11.16	230	50	180
Machine setter & set-up operator	**231,650**	**219,100**	**-12,550**	**-5.42**	**4,770**	**-1,250**	**6,020**
Num. control mach. tool op. & tend	**2,500**	**2,900**	**375**	**14.43**	**50**	**40**	**20**
Comb. mach. tool setter set-up opr	**9,150**	**9,750**	**575**	**6.40**	**340**	**60**	**280**
Comb. mach. tool op. & tend.	2,950	3,050	100	3.68	100	10	90
Comb. mach. tool setter & setup	6,200	6,650	475	7.71	240	50	190

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Mach. tool cut.& form. set. &	**91,450**	**73,050**	**-18,400**	**-20.14**	**300**	**-1,830**	**2,140**
Drill. mach. tool setter/operator	6,700	5,650	-1,000	-15.36	70	-90	170
Ext. & draw. ma. settter/operator	900	650	-250	-29.94	0	-20	10
Forging machine setter/operator	5,550	4,050	-1,450	-26.82	-50	-140	90
Grinding machine setter/operator	8,950	7,750	-1,175	-13.45	140	-110	260
Lathe machine tool setter/oper	9,100	7,900	-1,175	-13.22	80	-110	200
Machine forming operator & tender	21,250	16,150	-5,075	-23.95	-110	-500	390
Mach. tool cut. op. & tend.	23,850	18,150	-5,675	-23.95	80	-560	650
Milling mach. setter/operator	3,050	2,650	-375	-12.88	70	-30	110
Press mach. setter/operator	4,700	3,850	-825	-17.99	10	-70	90
Punch. mach. setter/operator	4,750	4,000	-750	-16.10	20	-70	100
Rolling mach. setter/operator	450	300	-100	-28.49	0	0	10
Sawing mach. tool setter/operator	1,250	1,050	-150	-14.57	20	-10	30
Shear mach. setter/operators	1,050	900	-100	-12.06	10	0	20
Met. fab. mach. setter/operator	**15,000**	**15,050**	**25**	**0.19**	**330**	**0**	**330**
Metal fabricators, struc. metal	850	1,000	150	17.87	40	10	20
Solder. & braz. mach. operators	150	150	0	-6.33	0	0	0
Solder & braz. mach. setter/op	600	650	50	7.36	20	0	20
Welding machine oper. & tend	8,450	8,000	-450	-5.56	120	-40	170
Welding machine setter/operator	4,950	5,250	325	6.37	140	30	110
Metal & plastic mach. setter/oper	**22,150**	**24,800**	**2,425**	**10.97**	**780**	**240**	**530**
Elec. plat. mach. oper. & tender	1,300	1,250	0	-0.90	20	0	20
Elec. plat. mach. setter/operator	1,400	1,400	25	2.21	30	0	30
Foundry mold assem. & shakeout op	500	300	-175	-39.01	0	-10	10
Furnace operators & tenders	900	800	-100	-12.42	30	0	40
Heaters, metal & plastic	150	150	0	-22.15	0	0	10
Heat. equip. setter/operator	950	900	0	-2.11	40	0	40
Heat treating mach. op. & tender	1,900	1,750	-100	-6.66	70	0	80
Metal molding mach. op. & tender	1,200	1,000	-200	-18.65	0	-10	20
Met. mold. mach. setter/operator	1,450	1,350	-50	-5.58	20	0	30
Nonel. plat. mach. op. & tender	50	50	0	10.70	0	0	0
Nonel. plat. ma. setter/operator	450	450	25	6.99	10	0	10
Plastic mold. mach. op. & tender	9,600	12,200	2,625	27.43	470	260	210
Plas. mold. mach. setter/operator	2,350	2,900	525	22.67	100	50	50
Printing, binding, & rel. work	**11,300**	**12,900**	**1,575**	**14.02**	**490**	**160**	**330**
Bindery machine operators	1,500	1,900	400	27.39	90	40	50
Bindery mach. setters/operators	850	1,000	150	15.96	40	10	30
Printing press operators	5,700	6,350	650	11.47	230	70	170
Letterpress setter/operator	600	550	-25	-6.63	10	0	20
Offset lithog. press set/oper	2,950	3,450	500	16.76	140	50	90
Printing press machine operator	1,900	2,100	175	9.30	70	20	60

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AO print. press setters/oper.	250	250	25	8.75	10	0	10
Photoeng. & lithog. mach. oper.	350	400	75	18.42	20	10	10
Photoen. & litho. photographers	550	650	100	19.76	30	10	20
Screen pr. mach. setter/operator	200	250	25	15.33	10	0	10
Typeset. & comp. mach. operator	900	950	75	8.49	30	10	20
All Other printing, binding, & rel	1,250	1,350	100	8.15	50	10	40
Text. & rel. setters & operators	**17,250**	**16,750**	**-475**	**-2.83**	**730**	**-40**	**780**
Laund. & drycl. mach. operators	5,350	5,650	300	5.48	330	30	300
Press. mach. op. & tend., textile	2,050	2,000	0	-1.72	110	0	120
Sewing mach. oper., garment	2,350	2,250	-75	-4.47	80	0	90
Sewing mach. oper., non-garm	6,750	6,200	-550	-8.35	200	-50	260
Shoe sewing mach. oper. & tender	300	250	-50	-25.44	0	0	0
Tex. bleach. & dye. mach. op	50	50	0	-9.15	0	0	0
Textile draw-out mach. oper.	50	50	0	-4.00	0	0	0
Wind ,twist, knit mach. oper.	200	200	0	-2.78	10	0	10
Textile mach. setters/operators	100	150	0	9.57	10	0	10
Woodworking machine setters/ops	**3,650**	**3,800**	**150**	**3.83**	**130**	**10**	**120**
Head sawyers	200	200	0	0.48	10	0	10
Sawing machine oper. & tender	1,050	1,100	0	1.02	40	0	40
Sawing machine setters/operators	450	500	25	6.88	20	0	20
Woodworking mach. oper. & tender	1,200	1,250	50	5.09	30	10	30
Woodwork. mach. setters/operators	700	750	25	4.94	30	0	30
Oth. mach. setters & operators	**59,200**	**60,400**	**1,200**	**2.04**	**1,820**	**120**	**1,490**
Boiler oper. & tend., low press.	800	800	0	-2.41	30	0	30
Cement. & gluing mach. oper.	950	950	0	-0.41	20	0	20
Chem. equip. controllers & oper.	1,600	1,550	-25	-3.05	40	0	40
Chemical equipment tenders	400	400	0	1.17	10	0	10
Cook. mach. oper. & tend., food	500	500	0	2.34	10	0	10
Crush. & mix. mach. op. & tender	4,100	4,100	25	0.86	110	0	100
Cut. & slic. mach. op. & tender	1,500	1,500	50	2.94	50	0	50
Dairy proc. eq. oper. & tender	450	350	-75	-20.67	0	0	10
Ext. & form. mach. op. & tender	1,700	1,850	175	9.76	50	20	30
Furnace, kiln, or kettle operator	500	350	-125	-30.98	0	-10	10
Motion picture projectionist	300	250	0	-11.43	20	0	20
Packaging & fill. mach. oper	8,250	8,550	300	3.57	200	30	170
Painting mach. oper. & tender	2,100	2,300	200	9.45	70	20	50
Painters, transportation equipt.	1,850	1,600	-225	-13.73	10	-20	40
Paper goods mach. setter/operator	1,350	1,350	0	-0.60	40	0	40
Photog. proc. mach. oper. & tend.	1,450	1,800	325	23.24	60	30	20
Roast. mach. oper. & tender	250	200	-25	-15.66	0	0	0
Separ. & still mach. op. & tend.	450	450	0	-3.41	10	0	10
Tire building machine operators	100	50	-25	-40.79	0	0	0

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All Other mach. operators & tender	21,350	21,500	175	0.80	580	20	560
All Other mach. setters/operator	9,350	10,000	650	7.06	320	70	260
Hand working occup., incl. assemblers	**145,050**	**138,900**	**-6,100**	**-4.22**	**2,170**	**-600**	**2,780**
Precision assemblers	**10,500**	**10,600**	**75**	**0.73**	**230**	**10**	**220**
Elec. & electron. eqpt. assembler	2,950	3,050	100	3.81	70	10	60
Electromechan. eq. assembler	1,400	1,300	-100	-9.29	10	0	20
Fitters, structural metal, precis	450	550	100	20.04	20	10	10
Mach. build. & precis, mach. ass.	3,300	3,350	75	2.16	70	10	60
Watch & clock assemblers	50	100	25	23.04	0	0	0
AO precision assemblers, metal	2,300	2,200	-50	-3.70	50	0	60
Oth. hand wkrs., incl. assembler	**134,500**	**128,350**	**-6,175**	**-4.61**	**1,940**	**-610**	**2,560**
Cannery workers	2,150	2,050	-50	-3.76	30	0	40
Coil winders, tapers, & finish.	750	850	125	16.16	30	10	20
Cutters & trimmers, hand	850	900	25	4.22	10	0	10
Electrical & electronic assembl.	6,400	6,700	300	4.85	150	30	120
Glaziers, manufacturing	100	100	25	15.24	0	0	0
Machine assemblers	2,900	2,900	25	0.57	50	0	50
Meat, poultry, & fish cutter	700	850	125	18.37	20	10	10
Metal pourers & casters, basic	900	800	-100	-13.42	10	0	20
Molders & casters, hand	950	950	0	0.54	20	0	20
Paint., coat., & decor. wkrs	1,450	1,800	350	24.50	120	40	80
Portable machine cutters	200	150	-25	-23.19	0	0	0
Pressers, hand	150	150	0	-8.46	0	0	0
Sewers, hand	100	100	0	-5.63	20	0	20
Welders & cutters	13,850	12,350	-1,450	-10.68	130	-140	270
All Other assemblers & fabricators	86,300	80,850	-5,400	-6.30	990	-530	1,530
All Other hand workers	16,800	16,750	0	-0.02	360	0	360
Plant & system occupations	**11,700**	**11,800**	**100**	**0.90**	**320**	**10**	**310**
Aux. equip. operators, power	**300**	**250**	**-25**	**-15.13**	**0**	**0**	**10**
Chemical plant & system operators	**950**	**950**	**25**	**1.81**	**30**	**0**	**30**
Gaugers	**50**	**50**	**0**	**-9.77**	**0**	**0**	**0**
Petrol. ref. & contr. panel oper.	**150**	**150**	**0**	**2.50**	**0**	**0**	**0**
Power distributors & dispatchers	**600**	**550**	**0**	**-2.23**	**10**	**0**	**10**
Stationary engineers	**1,100**	**1,050**	**0**	**-2.13**	**40**	**0**	**40**
Water & liq. waste treat. plant op	**1,650**	**1,850**	**175**	**10.69**	**60**	**20**	**40**
All Other plant & system operators	**7,000**	**8,950**	**0**	**-0.15**	**170**	**0**	**170**
Transp. & mat. moving & vehic. oper.	**169,500**	**181,150**	**11,675**	**6.89**	**5,380**	**1,170**	**4,220**
Aircraft pilots & fl. engineer	**1,750**	**2,800**	**1,050**	**60.01**	**150**	**110**	**50**

State of Michigan
OCCUPATIONAL EMPLOYMENT PROJECTIONS
1985 - 1995
(For Occupations of 50 Employment or Greater)

OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
Motor vehicle operators	**99,050**	**112,300**	**13,275**	**13.39**	**4,090**	**1,330**	**2,770**
Bus drivers	15,000	16,250	1,275	8.45	600	130	470
Bus drivers	2,400	2,400	0	0.29	70	0	70
Bus drivers, school	12,600	13,850	1,250	10.00	520	130	400
Taxi drivers & chauffeurs	900	1,000	100	12.30	70	10	60
Truck drivers	83,150	95,050	11,900	14.30	3,430	1,190	2,240
Rail transportation workers	**3,700**	**2,800**	**-850**	**-23.67**	**0**	**-80**	**80**
Locomotive engineers	600	450	-125	-24.16	0	-10	20
Locomotive firers	250	200	-25	-24.21	0	0	10
RR brake, signal, & switch oper.	1,400	1,050	-300	-23.59	0	-20	20
RR conductors & yardmasters	1,150	900	-250	-24.18	0	-20	30
Rail yd. eng., dinkey oper.	300	200	-25	-20.54	0	0	10
Water transportation & rel. wk	**350**	**350**	**0**	**0.11**	**10**	**0**	**10**
Captains, water vessel	150	150	25	10.25	10	0	0
Mates & able seamen	100	100	0	6.55	0	0	0
Ordinary seamen & marine oil	50	50	0	-7.03	0	0	0
Pilots, ship	50	50	0	-31.66	0	0	0
Ship engineers	50	50	0	-11.56	0	0	0
All Other transportation workers	**10,500**	**11,000**	**500**	**4.84**	**240**	**50**	**190**
Parking lot attendants	750	850	100	14.72	60	10	40
Service station attendants	9,750	10,150	400	4.10	190	40	150
Material moving equipment oper	**36,850**	**32,800**	**-4,025**	**-10.96**	**310**	**-390**	**710**
Conveyor operators & tenders	2,050	2,050	0	-1.11	30	0	40
Hoist, winch, & crane operat	3,400	3,300	-100	-3.83	100	0	120
Industrial truck & tractor oper.	25,150	20,300	-4,825	-19.32	-70	-480	400
Load. mach. op., undergr. mi	50	50	0	5.96	0	0	0
Oil pumpers, ex. well head	50	50	0	-12.25	0	0	0
Operating engineers	5,800	6,800	975	16.93	250	100	150
Tank car & truck loaders	50	100	0	3.05	0	0	0
Well head pumpers	250	250	0	-2.73	0	0	0
AO transp. & mat. mov. eq. ope	**17,300**	**19,050**	**1,750**	**10.19**	**590**	**180**	**410**
Helpers, labor., & mat. mov., ha	**145,350**	**157,450**	**12,100**	**8.32**	**4,270**	**1,210**	**3,060**
Construction trades helpers	**5,300**	**5,850**	**400**	**7.51**	**100**	**40**	**60**
Machine feeders & offbearers	**11,650**	**11,300**	**-300**	**-2.83**	**260**	**-20**	**290**

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OCCUPATION NAME	1985 EMPLOYMENT	1995 EMPLOYMENT	EMPLOYMENT CHANGE NUMBER	EMPLOYMENT CHANGE RATE	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
Freight, stock, & mat. movers	**28,000**	**28,550**	**2,575**	**9.87**	**820**	**280**	**380**
Refuse collectors	2,600	3,150	525	20.42	150	50	90
All Other freight & stock movers	23,400	25,400	2,025	8.69	470	200	270
All Other helpers, labor. & movers	**102,450**	**111,900**	**9,450**	**9.23**	**3,290**	**950**	**2,340**
Hand packers & packagers	14,550	18,750	4,200	28.95	860	420	430
Veh. washers & equip. cleaners	5,700	6,750	1,050	18.40	210	110	110
All Other helpers, labor., movers	82,200	86,400	4,200	5.11	2,220	420	1,800